## RIVERSIDE PARK ARCHAEOLOGY PROJECT ASSESSMENT OF SITE 33HA128 (42), THE EDWARDS SITE, HAMILTON COUNTY, OHIO

Submitted to:

Anderson Park District 8249 Clough Pike, Juilfs Park Cincinnati, Ohio 45244

Submitted by:

Natural & Ethical Environmental Solutions, LLC 4670 Imperial Drive Liberty Township, Ohio 45011

> Jeannine Kreinbrink Principal Investigator

> > September 1998 FINAL

#### ABSTRACT

The Edwards Mound and Perin Village archaeological sites (33Ha7, 128, 291) are located in Riverside Park, Anderson Township, Hamilton County, Ohio. The Anderson Park District owns and manages the park. Prior to implementing any construction or other impacts within the park, they requested an analysis of previous archaeological investigations and an evaluation of site boundaries and sensitive areas, in accordance with the Anderson Park District Preservation Plan.

In 1995, the Cincinnati Museum of Natural History (CMNH) staff and volunteers conducted a controlled surface collection and the excavation of several small test units at the site. Anderson Park District requested assistance in 1997 from the author in further assessing the horizontal boundaries of site 33Ha128, and in reviewing the results compiled by the CMNH effort. This report details both efforts.

The original scope of work for the 1997-1998 project proposed duplicating the methodology of the 1995 effort. However, due to failure of a tax levy in November 1997, the Anderson Park District could not allow disking and reseeding of the field. In addition, the fields are in almost constant use by soccer and lacrosse teams throughout the year.

We were able to accomplish shovel testing in two quadrants of the project area and a small amount of surface collection where the grass was sparse. While analytically the results are not truly comparable, the 1997-1998 testing did provide information on the horizontal extent of the site.

The boundaries of site 33Ha128 appear to be fairly inclusive of the soccer fields at Riverside Park as bounded by Round Bottom Road on the east, the Little Miami River bank/berm on the west, and the southern part of the field. On the northern end, the site probably extends beneath an existing parking lot. Central Ohio Valley Archaeological Society (COVAS) volunteers conducted shovel testing parallel to this parking lot in spring 1998. The testing produced chert flakes and fcr in the first row of shovel tests adjacent to the parking lot.

Natural & Ethical Environmental Solutions recommends caution to the Anderson Park District during the conduct of any earthmoving activities in the soccer fields at Riverside Park. Any project impacts below the base of the plowzone will encounter intact soils. These soils bear the high probability of containing cultural features, including human skeletal remains. Monitoring, at a minimum, of any excavation procedures is recommended for anywhere within the boundaries mentioned above. The southern end of the field should be considered at a somewhat lower probability than the remainder of the field.

Natural & Ethical Environmental Solutions, LLC 4670 Imperial Drive Liberty Township, Ohio 45011

ī		_
ı		
ŀ	п	170

# TABLE OF CONTENTS

ABSTRACT	······· 1
TABLE OF CONTENTS	
LIST OF FIGURES	iii
INTRODUCTION	
SITE BACKGROUND	
FIELD INVESTIGATIONS	
Cincinnati Museum of Natural History Results	8
1997-1998 Results	10
SUMMARY AND RECOMMENDATIONS	
Distribution Analysis	
RECOMMENDATIONS	21

Natural & Ethical Environmental Solutions, LLC 4670 Imperial Drive Liberty Township, Ohio 45011

Page ii

# LIST OF FIGURES.

Figure 1. Map of Ohio showing location of project area.	2
Figure 2. Portion of Madeira 7.5 minute topographic quadrangle showing location of projection of projection of Madeira 7.5 minute topographic quadrangle showing location of projection of Madeira 7.5 minute topographic quadrangle showing location of projection of Madeira 7.5 minute topographic quadrangle showing location of projection of Madeira 7.5 minute topographic quadrangle showing location of projection of Madeira 7.5 minute topographic quadrangle showing location of projection of Madeira 7.5 minute topographic quadrangle showing location of projection of Madeira 7.5 minute topographic quadrangle showing location of projection of pro	ect
area.	3
Figure 3. Project map showing tentative proposed development.	4
Figure 4. Project map showing relationship of proposed development to testing areas	9
Figure 5. Detail map showing 1997 shovel test locations.	11
Figure 6. Detail map showing 1998 shovel test locations.	12
Figure 7. Map showing distribution of bone from the surface collection.	15
Figure 8. Map showing distribution of lithics from the surface collection	16
Figure 9. Map showing distribution of pottery from the surface collection	18
Figure 10. Map showing distribution of fire cracked rock from the surface collection	19
Figure 11. Map showing distribution of unburned limestone from the surface collection	20
Figure 12. Map showing proposed site boundaries.	22

Natural & Ethical Environmental Solutions, LLC 4670 Imperial Drive Liberty Township, Ohio 45011 Page iii

#### INTRODUCTION

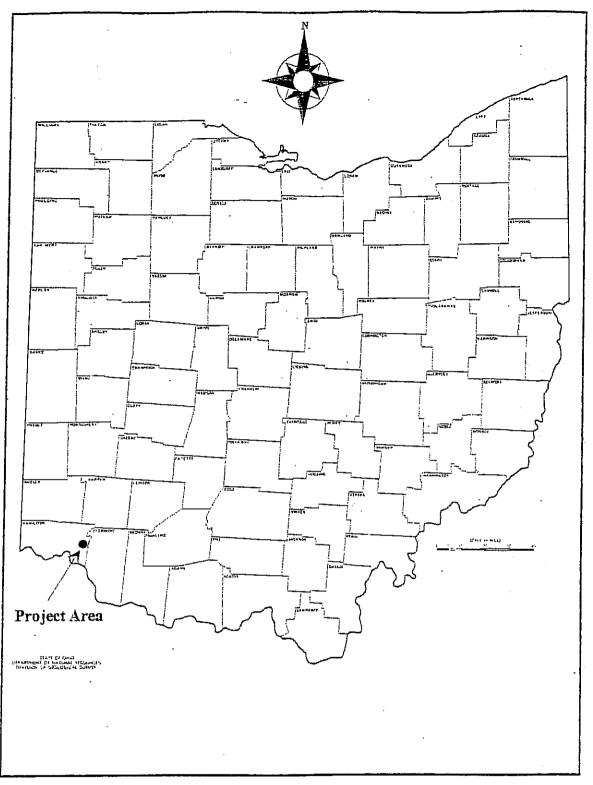
The Anderson Park District requested assistance in completing an archaeological investigation of the Edwards Mound and Perin Village sites, 33Ha7 (128, 251), located in Riverside Park. Riverside Park is situated along the Little Miami River in Anderson Township, Hamilton County, Ohio (Figure 1).

Ms. Jeannine Kreinbrink of Natural & Ethical Environmental Solutions, LLC, served as Principal Investigator for the project. Mr. Dick Combs of the Anderson Park District served as project contact. The Cincinnati Museum of Natural History conducted their investigations under the supervision of Dr. C. Wesley Cowan and Mr. Robert Genheimer with museum and Central Ohio Valley Archaeological Society (COVAS) volunteers. Current CMNH responsibility is held by Dr. Frank Cowan and Mr. Genheimer. Ms. Sarah Adams collated the CMNH data. Volunteers from the Central Ohio Valley Archaeology Society (COVAS) provided field assistance for both the CMNH and the 1997-1998 field investigations.

The Edwards site, 33Ha128 (42), is located on a terrace of the Little Miami River, just north of Newtown (Figure 2). The site occupies an old agricultural field that has been sodded for use as soccer fields. The northern end of Riverside Park now encompasses the location of the archaeological sites. Currently, the northern end of the park is sodded and is used for soccer and lacrosse. Potential future plans for the northern end include three baseball fields and an expanded parking lot (Figure 3).

Natural & Ethical Environmental Solutions, LLC 4670 Imperial Drive Liberty Township, Ohio 45011

Solutions, LLC Page



N&E Env. Solutions Not for Public Disclosure

Figure 1. Map of Ohio showing location of project area.

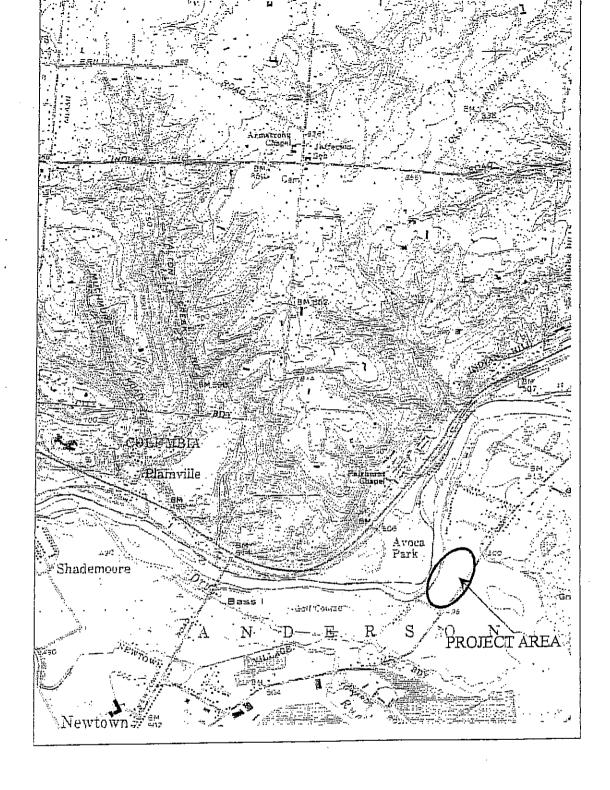


Figure 2. Portion of Madeira 7.5 minute topographic quadrangle showing location of project area.

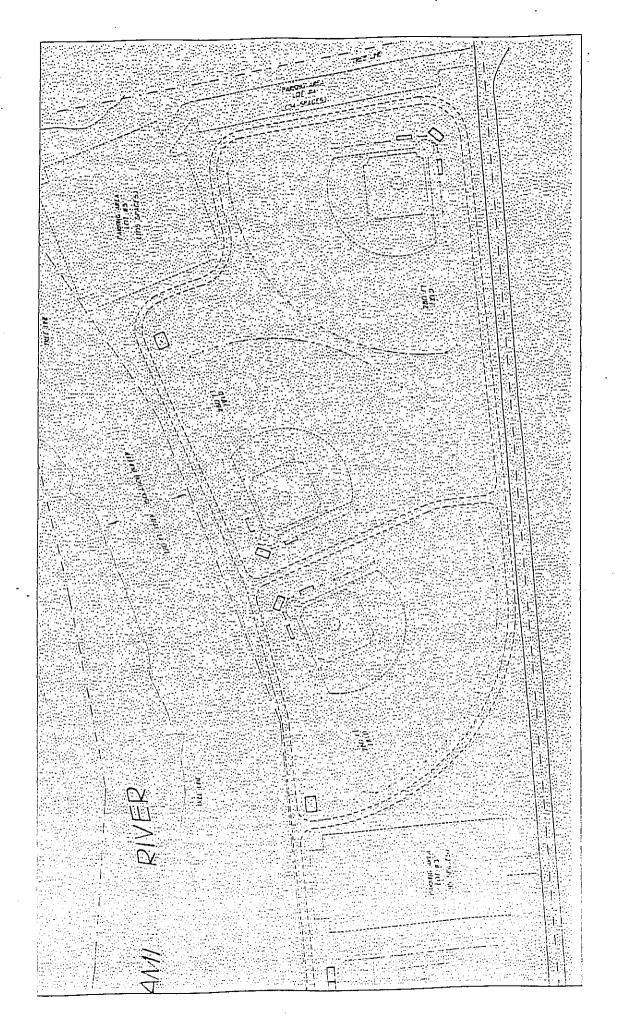


Figure 3. Project area map showing tentative proposed development.

#### SITE BACKGROUND

People have been aware of the presence of archaeological sites in the Riverside Park vicinity for many years. Starr (1960) describes excavations conducted at the Edwards Stone Mound in the early 1880s by Dr. Charles Metz. He gives the site location as follows: "It was located in the level bottom land adjoining the Little Miami River west of Roundbottom Road and three-fifths of a mile southwest of Benchmark 513." (Starr 1960:44). Benchmark 513 is the intersection of Roundbottom Road and Broadwell Road (Figure 2).

Dr. Metz excavated the Edwards Stone Mound sometime before 1883. He describes the excavation in a letter to Professor F.W. Putnam of Harvard University, dated March 1883 (Starr 1960:44-45). The description is reprinted here:

"At the time when I was engaged in the exploration of the Large Edward Mound No. 22, Mr. Edwards called my attention to a mound situated on the higher portion of the first bottom of the Little Miami River, and on a direct line N.W. from mound No. 22 distant about 500 yards from it. On visiting the locality with Mr. Edwards, I found the mound located about 100 yards from the river bank, on the higher portion of the mark of the river, and is not subject to inundation except at unusually high freshets of the river. The mound appeared about 2 1/2 feet high, 100 feet in diameter N. & S. and measured 120 feet in length E. & W. Mr. Edwards informed me that 60 years ago the mound was between 8 and 9 feet high, and was covered with the forest that also occupied all of the surrounding plain. Shortly after this time, the land was cleared, and he himself scraped down part of the mound, requiring the earth to fill up a depression in the plain nearby. He removed about 4 feet of the earth from the top when he encountered stones and human remains, for 50 years past he has cultivated the mound annually, and during the period has removed quantities of stone from it, besides ploughing up many skeletons and other bones, however finding no relics.

On March 8, we began exploration of the mound by making an excavation 15 ft. wide at the edge of the mound on the N.E. At a depth of 8 inches a layer of stone was found which extended upwards conforming to the slope of the sides of the mound. This stone was found to consist of from 4 to 7 courses being heavier in some places than in others and subsequently proved to extend entirely around the sides of the mound. The stones were of all sizes, from that not larger than a man's hand to that which can hardly be lifted. The larger stones were the hill limestones and were brought from the hills 3/4 mile distant while the smaller were flat and water worn, and evidently were taken from the river and drift gravel beds nearby. They were disposed in regular layers, some care seems to have been taken in their arrangements, this was evident wherever we found them undisturbed. Near the surface of the mound, many fragments of human and animal remains were found intermingled with stones that had been torn up by the plough. The men were instructed to completely uncover the stones all around the base. After this was done, a trench 25 ft wide was begun on the N.E. side, and was carried

Page

Natural & Ethical Environmental Solutions, LLC 4670 Imperial Drive Liberty Township, Ohio 45011

through the centre of the mound. About 2 ft. from the edge of the mound, a skeleton was discovered...

On the south side of the mound was a space 10 ft. wide and 12 ft. long where a fire had been kept up for some length of time, as the earth was burned red to a depth of 2 or 3 inches. In this space almost all of the animal remains and fragments of pottery sent you were obtained. Here was also found a considerable quantity of burned Unio shells. Five were found buried over this space. the base of the mound formed a complete circle 270 ft. around and 90 ft. in diameter..."

Metz succeeded in documenting 71 burials within the mound. Starr reports that one of the burials apparently had a "dog or young bear" buried with it, although it is not broken out in the list below. Starr listed the breakdown of burial types as:

- 32 extended 17 with artifacts in association
- 22 flexed 6 with artifacts in association
- 5 in one heap
- 1 child

3

1

- 1 with skull associated
- 2 isolated skulls
- 8 fragmentary

In preparation for his 1960 publication, Starr visited the location and observed a surface scatter of artifacts in the area surrounding the mound location. He found chert artifacts, pottery, and broken rock. Starr must have seen Metz's report because he states that the pottery he observed was "identical to that found in the mound".

Starr designated the Edwards Mound as site 33Ha205, and the surrounding village 33Ha42. These site numbers do not correspond to official Ohio Archaeological Inventory numbers and will not be used in this report to refer to the two sites.

The Ohio Archaeological Inventory (OAI) forms list three official numbers that describe this particular location (33Ha7, 128, and 291). The original card site file for 33Ha7 describes it as the Samuel Edwards Mound III. "Located on Samuel Edwards' farm between the Samuel Edwards Mounds I and II and the river, about 100 yards from the bank on an elevation of the bottom land." The card file also provides a reference for Metz's 1883 excavations: the 16th and 17th Annual Reports, Peabody Museum Vol III, Nos. 3 and 4, Cambridge 1884:pp. 344-346.

The Miami Purchase Association (MPA) completed updated OAI forms in 1975. The MPA obtained site number 33Ha128 for the Perin Village site (Starr's site 42), and 33Ha291 for the Edwards Stone Mound III (Starr's site 205). All the site numbers are listed on the 33Ha7 site file.

Natural & Ethical Environmental Solutions, LLC
4670 Imperial Drive
Liberty Township, Ohio 45011

Ó

Page

As reported by the MPA, the University of Cincinnati conducted small test excavations in the village portion of the site in 1974. They recovered pottery, chert tools, items listed as ceremonial objects, and a sample of corn (OAI form 1975). A conversation with Dr. Kent Vickery of UC in August 1998 reveals that two students conducted small test excavations while looking for a site at which to conduct a field school. He does not believe they found any features and they did not return to the site. When he gets back to school, he will look through their old files.

In 1995, the Cincinnati Museum of Natural History conducted a controlled surface collection over parts of the site. They also excavated two 1x1 meter units. They compiled field data forms and lab analysis sheets while cataloging their finds. No written description of the results of their field work and analysis was completed. This report utilizes their results to provide an assessment of the site and its horizontal boundaries. Please see the Results Section for that discussion.

Natural & Ethical Environmental Solutions, LLC 4670 Imperial Drive Liberty Township, Ohio 45011

## FIELD INVESTIGATIONS

The archaeological site situated within the northern part of Riverside Park has been investigated several times over the past 100+ years, as discussed in the Background Section. Most recently, the Cincinnati Museum of Natural History (CMNH) and the Anderson Park District have conducted investigations at the site. Both field projects are described below regarding methods and results.

## Cincinnati Museum of Natural History Results

The Cincinnati Museum of Natural History (CMNH) conducted both a controlled surface collection and excavation of several test units at the Edwards site in 1994 (Figure 4). Dr. C. Wesley Cowan and Mr. Robert Genheimer supervised the investigations. They used CMNH and COVAS volunteers for the field work.

## Field Methods

During 1995, one portion of the Edwards site was in use as a model airplane landing strip. The CMNH personnel asked for the surrounding area to be plowed. They sunk a permanent datum of pvc pipe and concrete at the edge of the landing strip. This datum is still there and provided a reference point for the 1997-1998 research described below.

Using the datum and the road as a guideline, they laid out a ten meter (30ft) grid system, over an area approximately 13,500 m<sup>2</sup> (Figure 4). The volunteers collected all artifacts and potential cultural material within each 10 meter grid.

They completed a data sheet for each collection grid square, noting numbers of fire cracked rock (fcr), unburned limestone, other sedimentary rock, and any igneous/metamorphic rock. The information from the field data sheets and subsequent artifact analysis forms has been entered into an Excel spreadsheet (Appendix 1). Examples of these forms are also included in Appendix 2.

During the course of the controlled surface collection, the CMNH staff conducted probing of the site area in an effort to locate subsurface features. They excavated two 1x1 meter units in likely locations. They placed Unit 1 at grid coordinates W62 N8. The excavation revealed two features below the plowzone. Feature 1 consisted of a partial human burial. They recovered a right tibia and fibula at 55-69cm below the unit datum. The investigators felt that the feature had been disturbed. Feature 2 is a yet undefined pit feature within the same 1x1 unit. No description or artifact catalog was made available.

Unit 2 was located at grid coordinates W52 N54 over an area that had been probed. They encountered Feature 3, a burned area of undetermined size and origin.

Natural & Ethical Environmental Solutions, LLC 4670 Imperial Drive Liberty Township, Ohio 45011 Page

Figure 4. Project map showing relationship of proposed development to tested areas.

Roundbottom Road edge of pavement Disturbed along toad 1995

Both test units clearly illustrate that subsurface deposits still exist at the site, both within the mound area and in the village that surrounds it. Although Feature 1 appeared disturbed, the presence of human bone in both plowzone and sub-plowzone context demonstrate the sensitive nature of the site regarding human burials. Even though the mound had been excavated in the 1830s, they apparently did not remove or find all the human remains present. This will be discussed further in the Summary and Conclusions Section of this report.

## 1997-1998 Results

The Anderson Park District requested further investigations at Riverside Park in 1997, prior to final design and implementation of physical changes at the park. Preliminary design plans call for construction of baseball diamonds and additional parking in the vicinity of the archaeological sites (Figure 3).

The author began the project in the fall of 1997 using volunteers from the Central Ohio Valley Archaeological Society (COVAS). The original project scope of work proposed to duplicate the 1995 collection methods. A proposed levy to provide funding to the Anderson Park District failed in November 1997. The Park District was unable to plow the field. Since the 1995 field investigations, the project area has been sodded and turned into soccer fields. They were unable to provide funding for plowing and subsequent re-seeding/sodding of the field.

This prompted a revision of the scope of work. Instead of duplicating the surface collection, which would have provided additional information on artifact densities as well as boundary definition, we had to rely on shovel testing. The goal then altered to simply presence/absence of artifacts, hopefully providing additional information on the horizontal extent of the archaeological sites (Figure 4).

We accomplished two field days at the site, one in November 1997 and the other in March 1998. The volunteers were able to shovel test two portions of the site and conduct a surface reconnaissance of a sparsely grassed area toward the southern part of the site. The results of the shovel testing are shown on Figures 5 and 6. How these results relate to the site boundary is discussed in the Summary and Recommendations Section.

Natural & Ethical Environmental Solutions, LLC
4670 Imperial Drive
Liberty Township, Ohio 45011

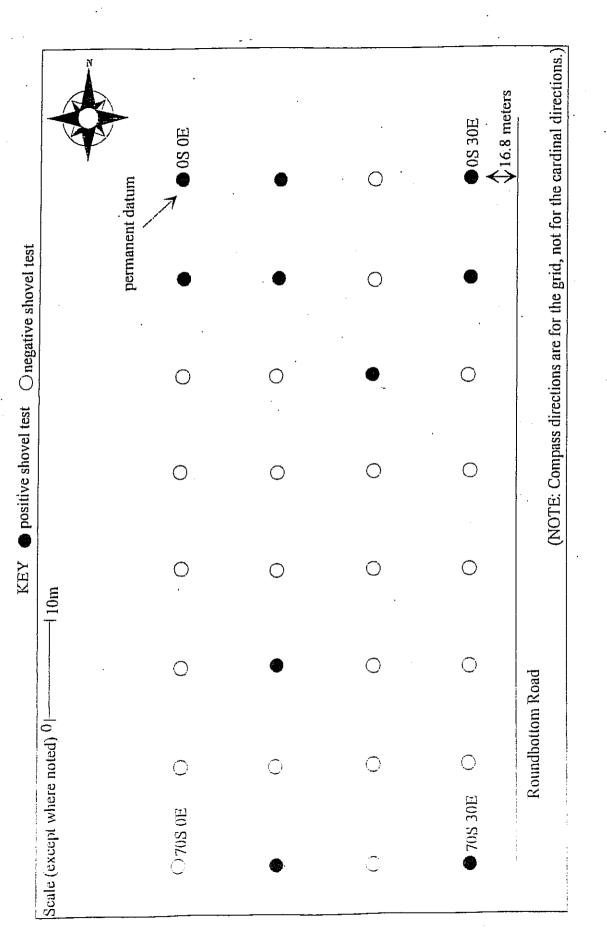


Figure 5. 1997 Shovel test area, Edwards/Riverside Park Site.

3

<u>a</u>

ž

\_\_

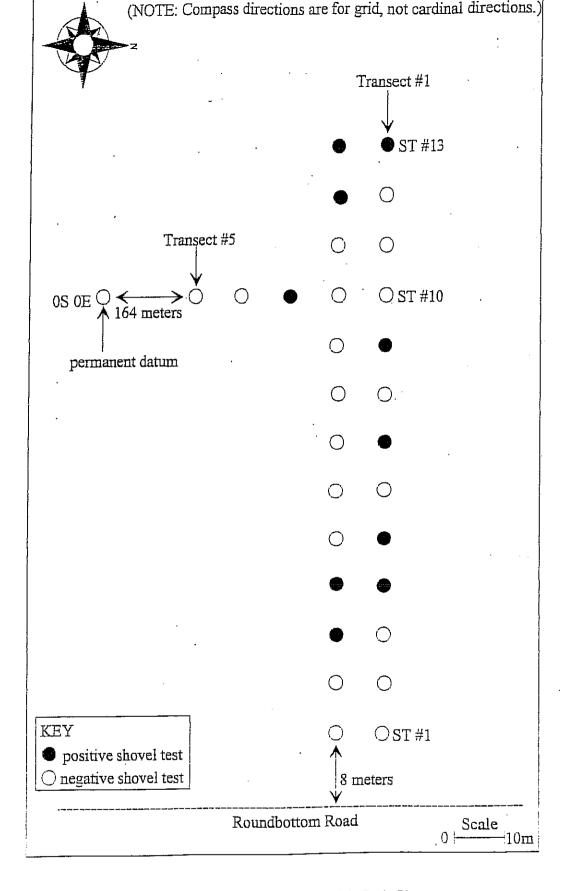


Figure 6. 1998 Shovel test area, Edwards/Riverside Park Site.

#### SUMMARY AND RECOMMENDATIONS

Prior to implementing any construction or other impacts to the northern end of Riverside Park, the Anderson Park District requested an analysis of previous archaeological investigations and an evaluation of site boundaries and sensitive areas. This investigation includes an analysis of the results of a field investigation by the Cincinnati Museum of Natural History (CMNH) in 1995 and a coordinated volunteer effort in 1997-1998 by the author, the Park District, and the Central Ohio Valley Archaeological Society (COVAS). This section includes a brief distributional analysis of the controlled surface collection conducted in 1995 and the shovel testing conducted in 1997-98. The project does not include an in-depth artifact analysis.

The archaeological sites located in the northern part of Riverside Park are known by several site names; including The Edwards Stone Mound, The Samuel Edwards Mound III, and the Perin Village site. The site numbers associated with the site include 33Ha7, 33Ha128, and 33Ha291. Starr (1960) referred to the Edward Mound site as 33Ha205 and the Perin Village as 33Ha42. These site numbers, however, are apparently not official Ohio Archaeological Inventory designations for these particular sites. Alternate sites with those numbers already existed on the west side of Hamilton County that were recorded before Starr's work in the late 1950s.

The field was first cultivated at least as early as Metz's work at the sites in the 1880s. In recent years, the property owner had cultivated pumpkins in the field. Part of the field also served as a model airplane landing field. Since 1995, the field has been a soccer/lacrosse field.

Metz excavated the stone mound in the early 1880s. The University of Cincinnati conducted a small series of test excavations in 1974 to ascertain whether they wanted to conduct an archaeological field school at the site. Their test pits did not uncover any features and they chose another site.

The 1995 CMNH investigations found an abundance of both unburned and fire cracked rock in the plowed up field, and encountered at least three intact cultural features during test unit excavations. The 1995 CMNH surface collection and Test Unit 1 produced human skeletal fragments.

The 1997-98 shovel testing recovered chert flakes and fire cracked rock. The extreme northern end of the field produced the most positive shovel tests, while the southern quadrant only produced one flake and several burned limestone fragments.

The following Distributional Analysis is based on the 1995 and 1997-98 investigations. They are then compared with the descriptions of Metz's 1883 excavations (Starr 1960).

<sup>1960</sup> The Archaeology of Hamilton County, Ohio. The Journal of the Cincinnati Museum of Natural History. 13 Page

Natural & Ethical Environmental Solutions, LLC

<sup>4670</sup> Imperial Drive

Liberty Township, Ohio 45011

## Distribution Analysis

## 1995 Controlled Surface Collection

CMNH personnel conducted the 1995 controlled surface collection under good field conditions. The field had been disked and surface visibility was excellent. Figures 7 through 11 illustrate the distributional analysis of various types of artifacts (Bone, Lithics, Pottery, Fire Cracked Rock, and Limestone). Each will be discussed briefly regarding densities and distribution.

Bone: The distribution of bone across the collected part of the site presents an interesting pattern. All the human bone is concentrated near the E-W '0" line (shown in bold on Figure 7). As will be seen below, this also corresponds with the heaviest concentrations of limestone and fire cracked rock. A test unit placed in this vicinity found human skeletal material below the plowzone, although in apparently disturbed context. This area around the E-W '0' line and between South 20 and North 20 probably overlaps with some portion of the original location of the Edwards stone mound that was excavated by Metz in 1883. Discussed in the Background Section of this report, that excavation reported a mound base 90 ft in diameter (27 meters). This would fit well within the grid coordinates listed above.

The distribution of animal bone fragments presents a very different distribution pattern. As seen on Figure 7, the animal bone is spread over much of the northwest quadrant of the grid system. One concentration corresponds with the distribution of human bone and the probable location of the mound (Figure 7). Starr's (1960) description of Metz' excavation of the mound mentions the presence of large amounts of animal bone in the mound fill (see transcription above).

A second, heavy concentration of animal bone is seen in the northwest quadrant (Figure 7). The second excavation unit was placed in this vicinity. That unit found evidence of a subplowzone feature. The dense concentration of bone in that area also corresponds with a rise in fer counts and a small rise in lithic artifact quantities. This portion of the site probably represents a domestic/activity area with subsurface cultural features.

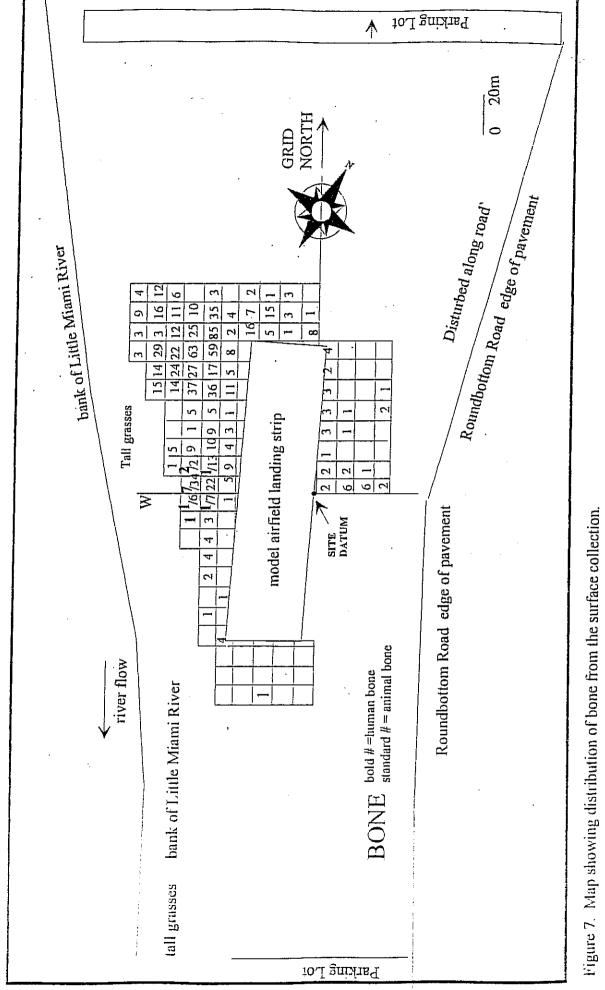
Lithics: Figure 8 reflects the distribution of lithic artifacts from the surface collection. As mentioned above, the pottery distribution matches that of the animal bone. Those squares also produced fairly large numbers of lithic artifacts as well.

The distribution of lithic artifacts probably reflects the habitation portion of the site. Large concentrations are seen in the northwest quadrant of the surface collection. The concentrations drop off dramatically toward the south and eastern parts of the collection area. One exception is the grid square below the site datum that also contained pottery and animal bone (Figures 7, 8, and 9). That square had 21 lithic artifacts while surrounding squares had much fewer. A feature probably has been plowed up in that vicinity.

Natural & Ethical Environmental Solutions, LLC 4670 Imperial Drive Liberty Township, Ohio 45011

I

Page 14



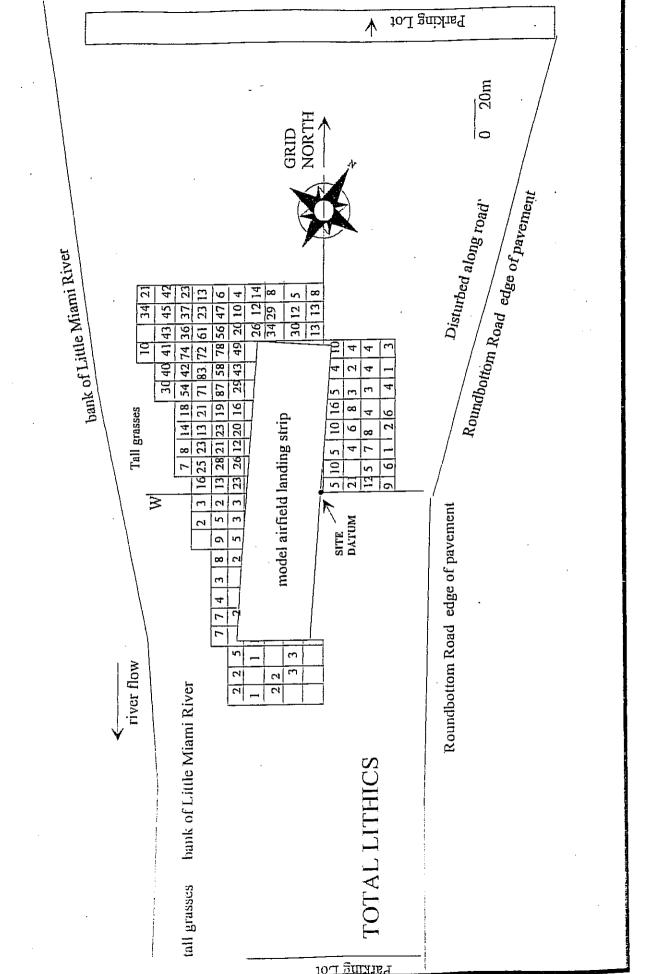
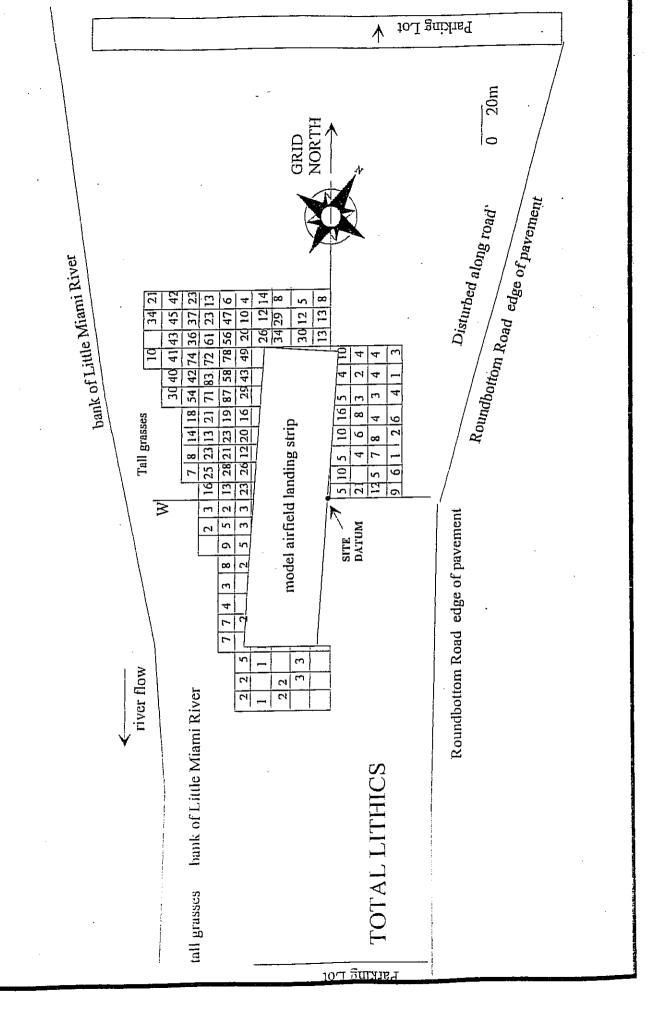


Figure 8. Map showing distribution of lithics from the surface collection.



3

Pottery: Figure 9 illustrates the distribution of prehistoric pottery sherds across the surface collection area. As seen with the lithic artifact distribution, most of the pottery is concentrated in the northwest portion of the surface collection grid. Larger numbers in individual blocks may represent plowed up features. The pottery concentration is very low in the vicinity of the proposed mound location. Starr's reporting of Metz' excavations did not report pottery from the mound context. This corresponds well with the other information from that report. The pottery concentrations indicate that the densest part of the site is in the northern part of the soccer field, as also indicated by the distribution of the other artifact types.

Fire Cracked Rock: The distribution of fire cracked rock (FCR) across the surface collection grids closely resembles the lithic and pottery distribution (Figure 10). In comparing Figure 10 with Figures 8 and 9, both the lithic and pottery artifacts and the FCR are much denser in the northwest quadrant. The presence of such large amounts of burned rock may indicate that many features have already been plowed up at the site. The large amount is also indicative of the high density of features that must exist below the plowzone.

The quantities of FCR also fall very quickly south and east of the site datum area. The exception appears to be below the site datum on Figure 10, where some numbers in the 30-40 range appear. This area may represent a separate, smaller concentration of features than in the northwest.

Limestone: A large concentration of unburned limestone may be seen in the central part of the surface collection grid, near the E-W '0' line (Figure 11). This concentration corresponds well with the location of the human skeletal remains seen on Figure 7. The Edwards Stone Mound reportedly contained large quantities of limestone, both creek and upland limestone slabs. Starr (1960) does not report what Metz did with the limestone that he excavated from the mound. It is apparent that a large quantity remained in the field.

Smaller concentrations are seen in the northwest quadrant. These may represent scatter from the mound excavations, or may have been associated with other features.

#### 1997-98 Shovel Testing

The 1997 shovel testing at Riverside Park was conducted in the southeast quadrant of the surface collection area. The CMNH project did not investigate this section in 1995. The shovel testing found few artifacts during the testing. The recovered artifacts consist of two chert flakes, seven fragments of FCR, and three unburned limestone fragments. Only one item, a fragment of limestone, was recovered from beneath the plowzone (grid square 10S 30E).

The lower density of artifacts from the 1997 shovel testing corresponds well with the lower levels of artifacts found in the southwestern and northeastern quadrants during the 1995 surface collection. The denser part of the site appears to be to the northwest.

Natural & Ethical Environmental Solutions, LLC 4670 Imperial Drive Liberty Township, Ohio 45011 Page 17

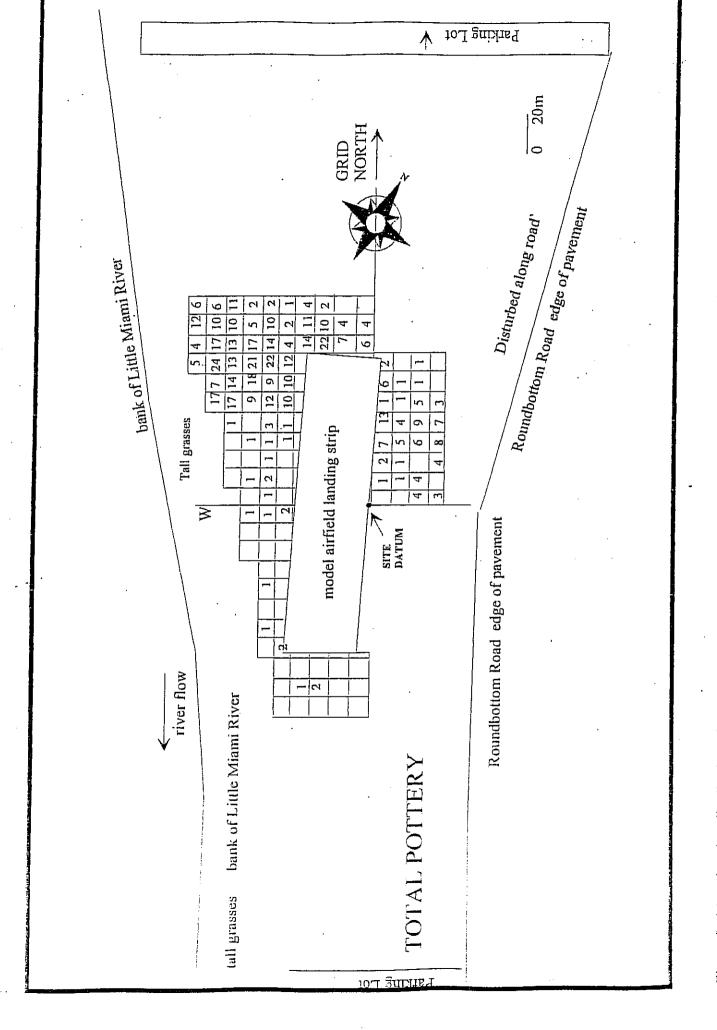


Figure 9. Map showing distribution of pottery from the surface collection.

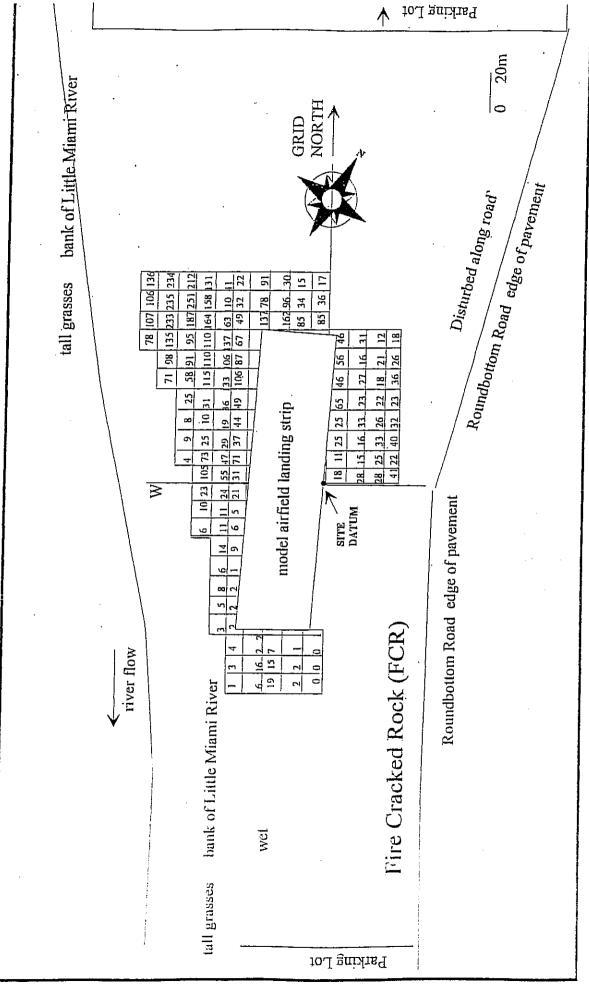
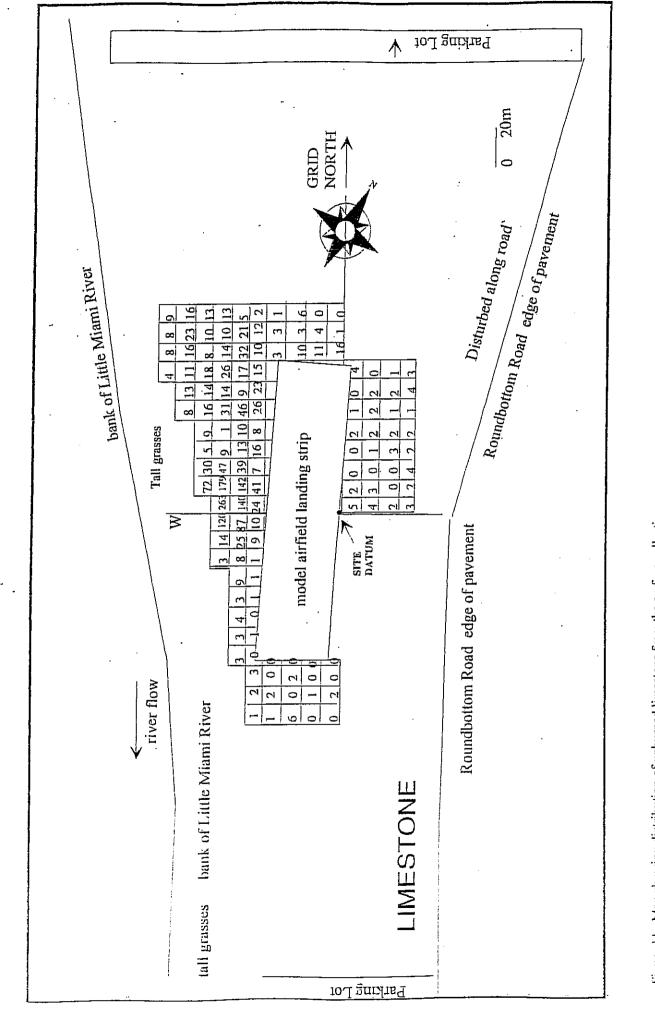


Figure 10. Map showing distribution of fire cracked rock from the surface collection.



I

Figure 11. Map showing distribution of unburned limestone from the surface collection.

The 1998 shovel testing was conducted along the northern end of the park, just south of a parking lot (Figure 4 and 6). This shovel testing recovered eight chert flakes, one unburned limestone fragment, and six FCR fragments. The higher number of chert flakes may indicate that the archaeological site continues northward, perhaps under the parking lot. A local collector noted that he had collected artifacts from that area, when the parking lot was part of the field.

#### RECOMMENDATIONS

The long history of archaeological investigations at the Edwards/Perin Village sites clearly illustrates the significance of the site. The information provided by those investigations has been synthesized in this report in an attempt to determine horizontal boundaries for the sites.

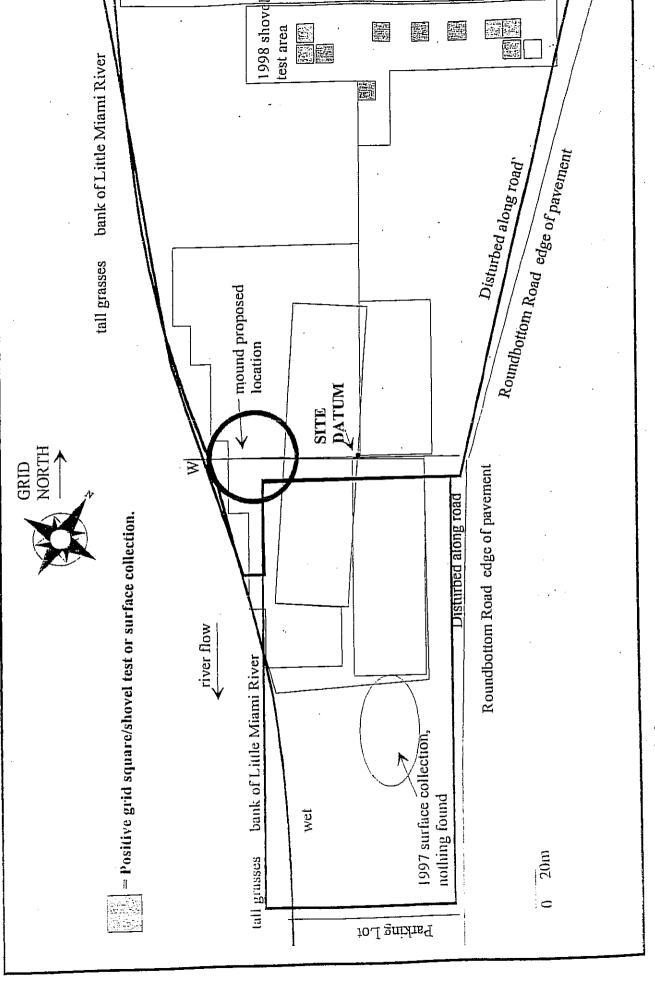
The mound may be confidently placed in the vicinity of grid coordinates W40-W80 and between S30 and N30. This allows for some leeway in several directions (Figure 12).

The Perin Village site appears concentrated to the north and northwest of the mound location, based on the surface collection distributions and the shovel testing results. The presence of both FCR and lithic artifacts both south and east of the site datum for over 110 meters south and 40 meters east, however, indicates that some level of prehistoric activity was also taking place in those areas. Plow scattering of materials would not cause that widespread of a distribution.

In summary, the heart of the site appears to be north of the site datum area, however, the entire field should be considered part of the Perin Village site. The most caution is advised for the mound area and for the northern half of the field. If any below-ground activity will take place in the northern half of the site, then the utmost caution should be taken, or archaeological investigations should take place prior to any digging. If any work will take place in the southern half of the site, then monitoring of the activity could suffice to check for the presence of significant archaeological features.

Any proposed development in Riverside Park will be evaluated using the Anderson Park District Preservation Plan. Section .2 states that archaeological investigations will be requested prior to any disturbance below the depth of plowzone in either Riverside or Clear Creek Parks. In addition, the Anderson Park District has a statement on file that addresses accidental discovery of any plowzone/disturbed archaeological materials. Both the Preservation Plan and the accidental discovery document include coordination with the Ohio Historic Preservation Office and the Ohio Council for Native American Burial Rights, both located in Columbus, Ohio.

Natural & Ethical Environmental Solutions, LLC 4670 Imperial Drive Liberty Township, Ohio 45011 Page 21



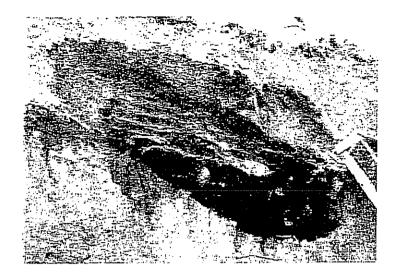
{

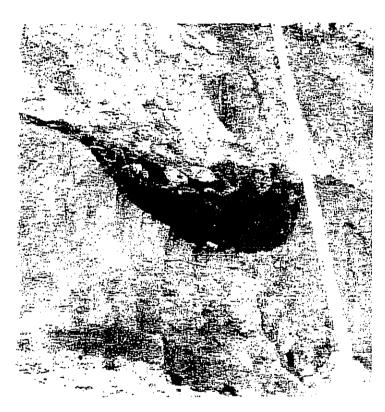
Figure 12. Proposed site boundaries.

APPENDIX 2 - PROJECT PHOTOS

Natural & Ethical Environmental Solutions 8857 Cincinnati-Dayton Road, Suite 203 West Chester, Ohio 45069

# PHOTOS: SITE 33HA128, FEATURE IN BANK – June 2002

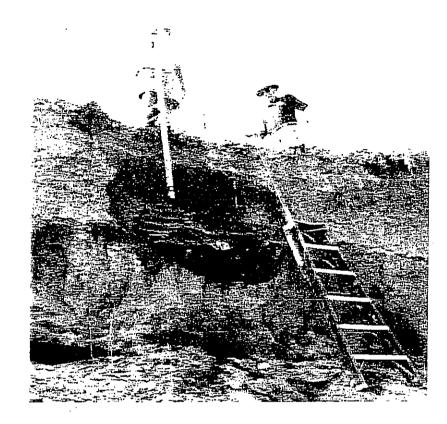




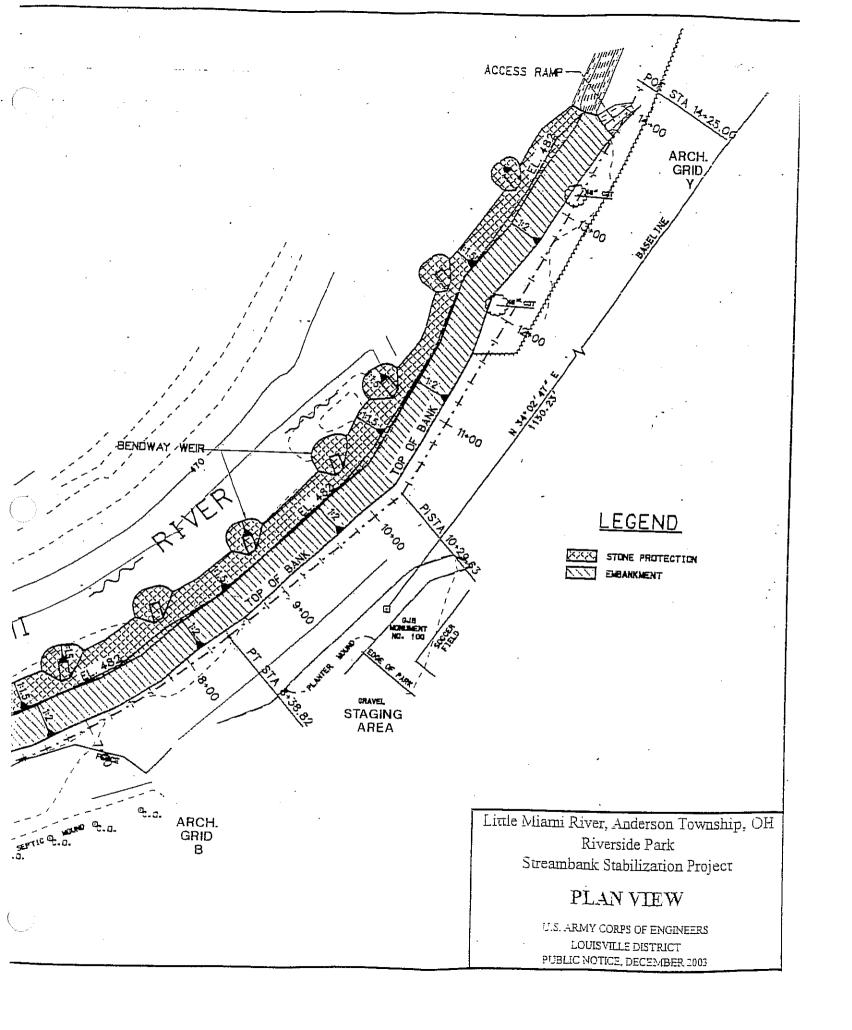
Natural & Ethical Environmental Solutions 8857 Cincinnati-Dayton Road, Suite 203 West Chester, Ohio 45069



# PHOTO: SITE 33HA128, FEATURE IN BANK – June 2002

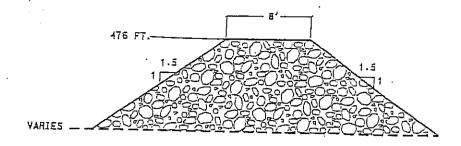


ENCLOSURE 3
PLAN VIEW & TYPICAL CROSS SECTION



OF 8.44 \_\_\_.495 FT.

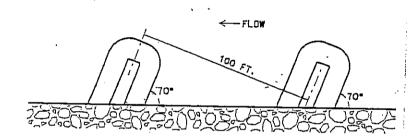
LE FILTER



TYPICAL CROSS SECTION

#### BENDYAY YETR

CALE: NONE



OF BANK

## PLAN VIEW BENDVAY VEIRS

SCALE: NONE

#### NOTES:

- 1. ODOT TYPE C ROCK IS RECOMMENDED FOR TOE PROTECTION.
  LAUNCH STONE AND BENDWAY WEIRS.
- WEIRS SHALL BEGIN AT THE LEFT BANK AND EXTEND AT A TO DEGREE ANGLE FROM THE BANK POINTED UPSTREAM INTO LITTLE MIAMI RIVER.
- 3. THE VEIRS SHALL BE SPACED 100 FEET FROM ONE WEIR CENTERLINE TO THE ADJACENT WEIR CENTERLINE.
- 4. THE WEIRS ARE 15 FEET IN LENGTH BETWEEN STATIONS 6+00 TO 13+00, 25 FEET AT STA. 5+00, 20 FEET AT STA. 4+00, AND 50 FEET AT STA. 3+00, AND 75 FEET AT STA. 2+00.
- 5. CONSTRUCTION SEQUENCE AND FINAL LENGTHS OF BENDWAY WEIRS WILL BE ADJUSTED AT THE FIELD DURING CONSTRUCTION BY THE FIELD ENGINEER.
- S. ORDINARY HIGH WATER IS 479 FT.

Little Miami River, Anderson Township, OH Riverside Park Streambank Stabilization Project

# TYPICAL CROSS-SECTION

U.S. ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT
PUBLIC NOTICE, DECEMBER 2003

. <del>-</del>	
	$\cdot$
1	

ENCLOSURE 4
PROPOSED PLANTING SCHEDULE

-			
··········			
·			

# LITTLE MIAMI RIVER, ANDERSON TOWNSHIP, HAMILTON COUNTY, OHIO STREAMBANK STABILIZATION STUDY PLANTING SCHEDULE

# High bank planting

## Seeding

Botanical Name	Common Name	Rate(lb./acre)
Andropogon gerardii	Big Blue Stem	2.5
Andropogon scoparius	Little Blue Stem	2
Bouteloua curtipendula	Side Oats Grama	1.5
Elymus canadensis	Prairie Wild Rye	1.5
Panicum virgatum	Prairie Switch Grass	2
Sorghastrum nutans	Indian Grass	3

Botanical Name	Common Name	Rate(oz./acre)
Anemone cylindrica	Thimbelweed	1 .
<u>Baptisia leucantha</u>	White Wild Indigo	1.3
<u>Baptisia leucophaea</u>	Cream Wild Indigo	1.6
<u>Cassia fasciculata</u>	Partridge Pea	2
<u>Desmodium illinoiense</u>	Prairie Bundle-Flower	1
<u>Echinacea pallida</u>	Pale Purple Coneflower	4
Eryngium yuccifolium	Rattlesnake Master	2
<u>Liatris aspera</u>	RoughBlazing Star	3
Liatris scariosa nieuwlandii	Blazing Star	1
Lupinus perennis	Wild Lupine	2
<u>Monarda fistulosa</u>	Prairie Bergamot	0 .3
<u>Petalostemum purpureum</u>	Purple Prairie Clover	3
<u>Ratrbida pinnata</u>	Yellow Coneflower	4
<u>Rudbeckia hirta</u>	Black-Eyed Susan	3
Silphium laciniatum	Compass Plant	2
Silphium terebinthinaceum	Prairie Dock	1
<u>Solidago nemoralis</u>	Old-Field Goldenrod	1
Solidago rigida	Stiff Goldenrod	2
Solidago speciosa	Showy Goldenrod	1

# Low bank planting

# Seeding

Botanical Name	Common Name	Rate(oz./acre)
<u>Acorus calamus</u>	Sweet flag	0.125
<u>Agrostris alba</u>	Redtop	2.0
<u>Agrostis alba palustris</u>	Creeping bent grass	0.5
<u>Alisma subcordatum</u>	Common water plantain	0.25
Eleocharis obtusa	Spike rush	0.375
<u>Juncus effusus</u>	Common rush	0.25
<u>Leersia orzvoides</u>	Rice cut grass	0.125
<u>Mimulus ringens</u>	Monkey flower	0.125
Polvgonum Pensvlvanicum	Smartweed	0.5
Pontederia cordata	Pickerel weed	0.5
<u>Sagittaria latifolia</u>	Broad leaf Arrowhead	0.250
<u>Scirpus latifolia</u>	Soft stem bulrush	0.118
<u>Sparganium eurvcarpum</u>	Bur reed	1.0

Avena sativa seed oats will be added to the seed mix at 32.0 pounds per acre for a cover crop.

## SHRUBS

Flame Azalea*	Deciduous Holly*
Smooth Azalea**	Wild Hydrangea*
Chokeberry **	Kentucky Coffee Tree*
Coralberry*	New Jersey Tea*
Roughleaf Dogwood**	Allegheny Serviceberry
Silky Dogwood*	Downy Serviceberry*
Elderberry**	Alder Smooth**
Hawthorn*	Spicebush*
Cocklespur Hawthorn*	Flameleaf Sumac*
Washington Hawthorn*	Smooth Sumac*
Staghorn Sumac*	Maple Leaf Viburnum*
Arrow-Wood Viburnum*	Witch Hazel*

<sup>\*\*</sup> LOWER BANK
\* UPPER BANK



## TREES TO BE PLANTED ON UPPER BANK

Bitternut Hickory Shagbark Hickory Black Locust

Post Oak

Black Walnut Chinkapin Oak Persimmon Pin Oak Red Oak

White Oak Sassafras

Sweetgum

Green Ash Black Oak

Paw Paw

ENCLOSURE 5
SAMPLE CONSTRUCTION SPECIFICATIONS LANGUAGE
ADDRESSING SPILLS

_			
4.5			

#### SECTION 01356A

#### STORM WATER POLLUTION PREVENTION MEASURES 08/96

#### PART 1 GENERAL

#### 1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

#### AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM D 4439	(1997) Standard Terminology for Geosynthetics
ASTM D 4491	(1996) Water Permeability of Geotextiles by Permittivity
ASTM D 4533	(1991; R 1996) Trapezoid Tearing Strength of Geotextiles
ASTM D 4632	(1991; R 1996)) Grab Breaking Load and Elongation of Geotextiles
ASTM D 4751	(1995) Determining Apparent Opening Size of a Geotextile
ASTM D 4873	(1995) Identification, Storage, and Handling of Geosynthetic Rolls

#### 1.2 GENERAL

The Contractor shall implement the storm water pollution prevention measures specified in this section in a manner which will meet the requirements of the appropriate National Pollution Discharge Elimination System (NPDES) permit.

#### 1.3 MEASUREMENT AND PAYMENT

No seperate payment will be made for the work covered under this section and all costs in connection herewith shall be included in the applicable contract price for the item to which the work pertains.

#### EROSION AND SEDIMENT CONTROLS

The controls and measures required by the Contractor are described below.

#### 1.4.1 Stabilization Practices

The stabilization practices to be implemented shall include rectentiles, preservation of mature vegetation, etc. On his daily TQC Report, the Contractor shall record the mates when the major grading activities accur,

(e.g., soil fill, ); when construction activities temporarily or permanently cease on a portion of the site; and when stabilization practices are initiated. Except as provided in paragraphs UNSUITABLE CONDITIONS and NO ACTIVITY FOR LESS THAN 21 DAYS, stabilization practices shall be initiated as soon as practicable, but no more than 14 days, in any portion of the site where construction activities have temporarily or permanently ceased.

#### 1.4.1.1 Unsuitable Conditions

Where the initiation of stabilization measures by the fourteenth day after construction activity temporarily or permanently ceases is precluded by unsuitable conditions caused by the weather, stabilization practices shall be initiated as soon as practicable after conditions become suitable.

#### 1.4.1.2 No Activity for Less Than 21 Days

Where construction activity will resume on a portion of the site within 21 days from when activities ceased (e.g., the total time period that construction activity is temporarily ceased is less than 21 days), then stabilization practices do not have to be initiated on that portion of the site by the fourteenth day after construction activity temporarily ceased.

#### 1.4.2 Structural Practices

Structural practices shall be implemented to prevent tracking of materials from the construction site onto public roadways. Structural practices shall include the following devices.

#### 1.4.2.1 Temporary Construction Entrance/Exit

The Contractor shall construct a temporary stone construction Entrance/Exit to preven the tracking of materials from the construction site onto public roadways.

#### 1.4.2.2 Not Used

- g. Not Used
- 1.4.2.3 Not Used
- PART 2 PRODUCTS (NOT USED
- PART 3 EXECUTION

#### 3.4 INSPECTIONS AND MAINTENENCE

#### 3.4.1 General

The Contractor shall inspect disturbed areas of the construction site, areas used for storage of materials that are exposed to precipitation that have not been finally stabilized, stabilization practices, structural practices, other controls, and area where vehicles exit the site at least once every seven (7) calendar days and within 24 hours of the end of any storm that produces 0.5 inches or more rainfall at the site. Where sites have been finally stabilized, such inspection shall be conducted at least

#### 3.4.2 Inspections Details

Disturbed areas and areas used for material storage that are exposed to precipitation shall be inspected for evidence of, or the potential for, pollutants entering the drainage system. Locations where vehicles exit the site shall be inspected for evidence of offsite sediment tracking.

#### 3.4.3 Inspection Reports

For each inspection conducted, the Contractor shall prepare a report summarizing the scope of the inspection, name(s) and qualifications of personnel making the inspection, the date(s) of the inspection, major observations relating to the implementation of the Storm Water Pollution Prevention Plan, maintenance performed, and actions taken. The report shall be furnished to the Contracting Officer within 24 hours of the inspection as a part of the Contractor's daily CQC REPORT. A copy of the inspection report shall be maintained on the job site.

#### 3.4.4 Maintenence

The contractor shall shape the entrance and exit as needed for drainage and runoff control. The entrance/exit shall be top-dressed with clean stone as needed to prevent mud and sediment from being tracked off site. Mud or sediment tracked or washed onto public roads shall be removed immediately. Flushing can only be used if the water is conveyed into a sediment basin. Any broken road payement shall be repaired immediately.

-- End of Section --

Fage 3

### ENVIRONMENT PROTECTION 10/98

#### PART 1 GENERAL

#### 1.1 PAYMENT

No seperate payment or direct payment will be made for the cost of work covered under this section, and such work will be considered as a subsidiary obligation of the Contractor.

#### 1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Environmental Protection Program; G RE.

Within 10 calendar days after Notice to Proceed and prior to commencement of the work at the site, the Contractor shall:

- (1) Submit in writing his detailed proposal for implementing the requirements for environmental pollution control specified herein.
- (2) Meet the representatives of the Contracting Officer to review and alter his proposal as needed for compliance with the environmental pollution control program.

#### Preconstruction Survey

Prior to start of any onsite construction activities, the Contractor and the Contracting Officer shall make a joint condition survey, after which the Contractor shall prepare a brief report indicating on a layout plan the condition of trees, shrubs, and grassed areas immediately adjacent to the site of the work and adjacent to his assigned storage area and access routes(s) as applicable. This report will be signed by both the Contracting Officer and Contractor upon mutual agreement as to its accuracy and completeness.

Waste Disposal Scheme

As part of his proposed implementation under Paragraph 3.2, and prior to onsite construction, the Contractor shall submit a description of his scheme for disposing of waste materials resulting from the work under this contract. If any waste material is dumped in unauthorized area, the Contractor shall remove the material and restore the area to the condition of the adjacent undisturbed areas.

#### PART 2 PRODUCTS (NOT APPLICABLE)

#### PART 3 EXECUTION

#### 3.1 GENERAL

The Contractor shall perform all work in such manner as to minimize the pollution of air, water, or land, and shall, within reasonable limits, control noise and the disposal of solid waste materials, as well as other pollutants.

#### 3.2 IMPLEMENTATION

Within 10 calendar days after Notice to Proceed and prior to commencement of the work at the site, the Contractor shall meet the representatives of the Contracting Officer to review and alter his proposal as needed for compliance with the environmental pollution control program.

#### 3.3 PROTECTION OF LAND AREAS

Except for any work on storage areas and access routes specifically assigned for the use of the Contractor under this contract, the land areas outside the limits of permanent work performed under this contract shall, in accordance with CONTRACT CLAUSE: PROTECTION OF EXISTING VEGETATION, STRUCTURE, UTILITIES AND IMPROVEMENTS, be preserved in their present condition. Contractor shall confine his construction activities to areas defined for work on the plans or specifically assigned for his use. In accordance with CONTRACT CLAUSE: OPERATIONS AND STORAGE AREAS, storage and related areas and access routes required temporarily by the Contractor in the performance of the work will be assigned by the Contracting Officer. No other areas on Government premises shall be used by the Contractor without written consent of the Contractor Officer.

#### 3.4 PROTECTION OF TREES AND SHRUBS

CONTRACT CLAUSE: PROTECTION OF EXISTING VEGETATION, STRUCTURES, UTILITIES AND IMPROVEMENTS, is hereby supplemented as follows: The Contractor shall not deface, injure or destroy trees or shrubs, nor remove or cut them without special authority. No ropes, cables, or guys shall be fastened to or attached to any existing nearby trees for anchorage.

#### 3.4.1 Tree Protective Structures

Where, in the opinion of the Contracting Officer, trees may possibly be defaced, bruised, injured or otherwise damaged by the Contractor's equipment or by his other operations, he may direct the Contractor to provide temporary protection of such trees by placing boards, plans, or poles around them.

#### 3.4.2 Restoration of Damaged Trees

Any tree scarred or damaged by the Contractor's equipment or operations shall be restored as nearly as possible to its original condition at the Contractor's expense. All scars made on trees not designated on the plans to be removed by construction operations shall be coated as soon as possible with an approved tree wound dressing. Trees that are to remain, either within or outside established clearing limits, that are kamaded by

the Contractor so as to be beyond saving in the opinion of the Contracting Officer, shall be immediately removed, if so directed, and replaced with a nursery-grown tree of the same species and size.

#### 3.5 PROTECTION OF WATER RESOURCES

The Contractor shall comply with applicable Federal, State, County and Municipal laws concerning pollution of rivers and streams while performing work under this contract. Special measures shall be taken to prevent chemicals, fuels, oils, greases, bituminous materials, herbicides and insecticides from entering public waters.

#### 3.6 ACTIVITY ENVIRONMENTAL ANALYSIS

Before starting any major phase of the work, an Activity Environmental Analysis shall be developed by the contractor and reviewed with the Government Representative. A major phase of the work is defined as an operation involving a type of work not previously experienced which presents possible sources of adverse environmental effects. This analysis will evaluate potential environmental consequences of the activity and the techniques which will be utilized to accomplish the work in an acceptable manner. This analysis included: (1) the phase or activity or work; (2) the potential environmental consequences of the activity; (3) precautionary actions to prevent adverse environmental impacts; (4) actions in the event of an environmental incident; and (5) the appropriate reference to Federal, State, or Local standards, regulations, or laws.

#### 3.7 BURNING

Air pollution restrictions applicable to this project are as follows. Materials shall not be burned on the Government premises. If the Contractor elects to dispose of waste materials off the Government premises, by burning, he shall make his own arrangements for such burning area and shall, as specified in CONTRACT CLAUSE: PERMITS AND RESPONSIBILITIES, conform to all local regulations.

#### 3.8 DUST CONTROL

The Contractor shall maintain all excavations, stockpiles, access roads, waste areas, and all other work free from excess dust to such reasonable degree as to avoid causing a hazard or nuisance to the Using Service or to others. Approved temporary methods consisting of sprinkling, chemical treatment, or similar methods will be permitted to control dust. Dust control shall be performed as the work proceeds and whenever a dust nuisance or hazard occurs.

#### 3.9 EROSION CONTROL

Surface drainage from cuts and fills within the construction limits, whether or not completed, and from borrow and waste disposal areas, shall be graded to control erosion within acceptable limits. Temporary control measures shall be provided and maintained until permanent drainage facilities are completed and operative. The area of bare soil exposed at any one time by construction operations, should be held to a minimum.

#### 3.10 MOT USED

ng a		
g		
5 <del>2</del>		
ry = 1,		
- r		
•		

#### 3.11 CORRECTIVE ACTION

The Contractor shall, upon receipt of a notice in writing of any noncompliance with the foregoing provisions, take immediate corrective action. If the Contractor fails or refuses to comply promptly, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to any such stop orders shall be made the subject of a claim for extension of time or for excess costs of damages by the Contractor unless it was later determined that the Contractor was in compliance.

#### 3.12 POST-CONSTRUCTION CLEANUP OR OBLITERATION

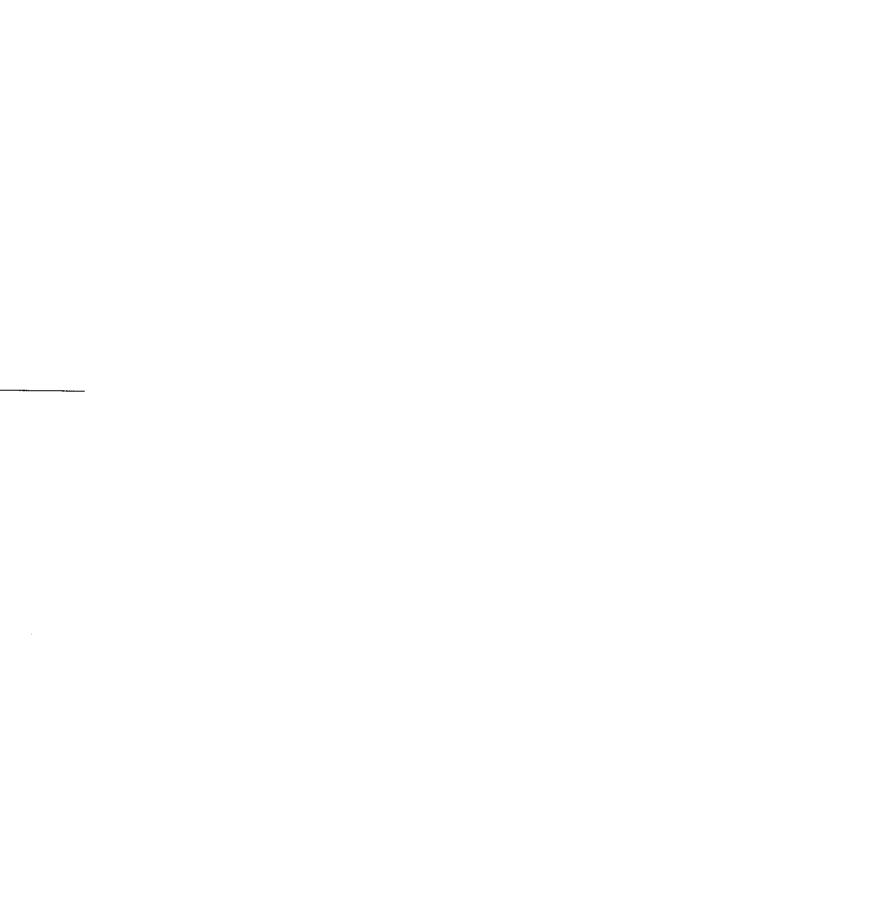
In accordance with CONTRACT CLAUSE: CLEANING UP, the Contractor shall, unless other wise instructed in writing by the Contracting Officer, obliterate all signs of temporary construction facilities such as haul roads, work areas, structures, foundations of temporary structures, stockpiles of excess or waste materials, and other vestiges of construction prior to final acceptance of the work. The disturbed areas shall be graded and filled and the entire area seeded.

#### 3.13 PAYMENT

No separate payment or direct payment will be made for the cost of the work covered under this section, and such work will be considered as a subsidiary obligation of the Contractor.

-- End of Section --

# ENCLOSURE 6 LETTER FROM OHIO HISTORIC PRESERVATION OFFICE



#### Ohio Historic Preservation Office

567 East Hudson Street Columbus, Ohio 43211-1030 614/ 298-2000 Fax: 614/ 298-2037

Visit us at www.ohiohistory.org





February 19, 2004

Sonia L. Suggs U.S. Army Corps of Engineers, Louisville District Attn: CELRL-PM-P-F P.O. Box 59 Louisville, KY 40201-0059

Re: Section 14 Study, Erosion Protection for Anderson Township Park Anderson Township, Hamilton County, Ohio

Dear Ms. Suggs,

This is in response to correspondence from your office dated December 18, 2003 (received December 26) regarding the above referenced project. The comments of the Ohio Historic Preservation Office are submitted in accordance with provisions of the National Historic Preservation Act of 1966, as amended (16-U.S.C. 470-[36-CFR-800]).

The project involves construction of streambank protection measures along the left descending bank of the Little Miami River at Anderson Township Park. Archaeological investigations in this area have resulted in the recovery of a substantial assemblage from site 33-HA-128. We concur with your findings that archaeological site 33-HA-128 meets the criteria for eligibility in the National Register of Historic Places (Criterion D: Has yielded or is likely to yield new and important information on prehistory or history) and that the proposed project will not adversely affect this historic property given the design and limits of the project.

Archaeological investigations conducted by the Cincinnati Museum Center in the mid 1990s produced evidence of a deep midden with large features containing Late Woodland Period diagnostic artifacts in the park area extending southeast of the river bend where there is severe erosion and the subject of this project. Additional archaeological work was conducted in the latter 1990s and again in 2002 by Natural and Ethical Environmental Solutions. In 2002, a large pit feature was observed and investigated along the eroding bank. Radiocarbon dating places this feature in the Late Woodland Period. Erosion along this section of the Little Miami River is destroying portions of an important archaeological site that contain features. For most of Ohio the Late Woodland Period is poorly understood although there are numerous sites with Late Woodland Period components. During this period current evidence points to a steady increase in the population coupled with the coalescence of the population in nucleated villages and increasing emphasis on horticulture. By the end of the Late Woodland Period, subsistence based on raising corn, beans, and squash is firmly established. Thus, the Late Woodland Period represents a significant transformation in how native peoples lived, however, to date there has been considerably greater emphasis on the striking cultural developments in the preceding Hopewell Culture and succeeding Late Prehistoric Period than on the transformations in the Late Woodland Period. Given the proximity of site 33-HA-128 to both significant Middle

Ms. Sonia L. Suggs February 19, 2004 Page 2

Woodland Period (Hopewell) and Late Prehistoric Period sites along the Little Miami River, preservation of site 33-HA-128 provides a critical link in ongoing studies of these cultural transformations. Site 33-HA-128 has produced a substantial assemblage with diagnostic artifacts and dated radiocarbon samples recovered from features yielding new and important information on the Late Woodland Period. The preservation of this site with its substantial midden and features has the potential to yield additional new and important information on the Late Woodland Period.

The preferred alternative proposes construction along the edge of the river with backfilling against the stream bank. The construction will involve movement of heavy equipment across the archaeological site and along the edge of the site. It is likely that there will be some surface landscaping necessary to smooth the top of the bank into the project. We believe that the possibility of ground disturbance during construction is the only effect with potential to adversely affect this archaeological site. Archaeological investigations, including shovel testing, near the edge of the bank show that the sod layer is substantial. It is our opinion that the sod layer and the extent of previous disturbance from construction of the access road and the septic mound provide a buffer between the archaeological deposits within site 33-HA-128 and the disturbance likely from the proposed construction.

For these reasons we concur with your No Adverse Effect finding [36 CFR 800.5(b)] for this project. No further coordination with this office is necessary for this project unless there is a change in the scope of work.

Any questions concerning this matter should be addressed to David Snyder at (614) 298-2000, between the hours of 8 am to 5 pm. Thank you for your cooperation.

Sincerely,

David Snyder, Archaeology Reviews Manager Resource Protection and Review

DMS/ds (OHPO Serial Number 999734)

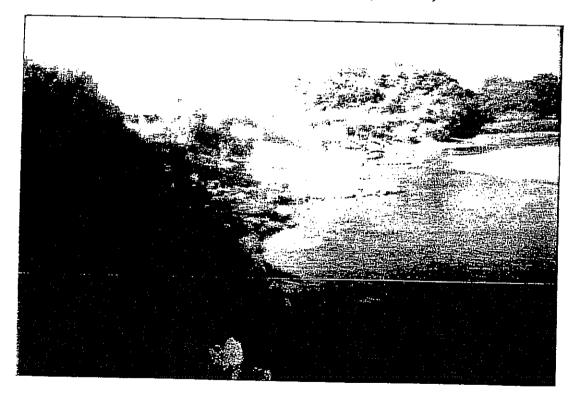
ENCLOSURE 7
EXAMPLE OF PROJECTS USING BENDWAY WEIRS
(photos taken by Mr. David Derrick)



Example of bendway weirs. The bendway weirs included in the project will be constructed three feet below the ordinary high water elevation.



Bendway weirs on Bear Creek, IL (as built)



Bendway weirs on Bear Creek. IL (seen here after one growing season)

May 14, 2004

Ms. Sharon M. Bond Chief, Planning Branch US Army Engineer District, Louisville P.O. Box 59 Louisville, KY 40201-0059

Dear Ms. Bond:

Anderson Township Park District hereinafter called the "sponsor," is interested in obtaining Corps of Engineers assistance in addressing a streambank erosion problem along Little Miami River at the Anderson Township Park, under authority of Section 14 of the 1946 Flood Control Act. The Sponsor has reviewed the preliminary results of the study on the erosion problem and is interested in proceeding with the project. In this regard, the Sponsor requests the Corps of Engineers proceed with the project. The total project cost is expected to be approximately \$1,175,000. An estimated \$368,250 is the Sponsor's anticipated cash contribution. It is estimated that easements, relocations, right-of-way, and disposal amount to approximately \$29,000.

The Sponsor is aware that its responsibility in project construction includes the following:

- a. Provide the United States all lands, easements, rights-of-way, access routes, relocation, and alternations of all buildings, utilities, highways, highway bridges, sewers, related facilities, and disposal areas, hereinafter called "LERRD", whether or not shown on the project plans, necessary for project construction and subsequent operation and maintenance of the project. The fair market value of all LERRD shall be attributed toward the non-federal portion of project construction costs and shall be applied as that share of the non-federal obligation for cost-sharing (see para. d. below).
- b. Hold and save the United States free from damages due to the construction, operation, and maintenance of the project excepting damages, if any, due to the fault or negligence of the United States or its contractors, and adjust all claims concerning water rights, if applicable.
- c. Maintain and operate the project after completion without cost to the United States in accordance with regulations prescribed by the Secretary of the Army.
- d. Assume full responsibility for all project costs in excess of the Federal cost limitations of \$1,000,000 and in further accordance with project cost-sharing guidelines as described below.

- 1. The Sponsor shall be required to provide an amount equal to but not less than 35% of total project costs, at least 5% of which will be in cash. The amount to be provided shall include all LERRDs, as determined necessary by the Chief of Engineers, for project construction, operation, and maintenance. The value of the LERRDs shall be the fair market at the times such lands or items of work are made available to the government.
- 2. If the value of the LERRDs required for the project is equal to or greater than 30% of total project costs, the Sponsor will contribute those items plus a cash payment equal to 5% of the total project costs.
- 3. If the value of LERRDs required for the project is less that 30% of total project costs, the Sponsor will contribute those items plus a cash payment to the difference between the value of those items and 35% of total project costs; provided however, the required cash payment shall not be less that 5% of total project costs.
- 4. The entire required amount of the non-federal contributions, as described above, shall be paid by the completion date of the project construction period.
- e. Prevent future encroachments that might interfere with proper functioning of the project for erosion control.
- f. Execute a final and legally binding local assurance agreement incorporating all the above required measures of local cooperation.

Anderson Township Park District intends to finance the non-federal portion of the project costs including items a. through e. above, through an appropriation of \$403,000 in the 2004 Anderson Park District budget in account B-02. The source of funding for these funds is local Anderson Township property taxes.

We have received a draft copy of the Project Cooperation Agreement (PCA) necessary for project implementation and concur with the various provisions contained therein.

In carrying out the specified non-federal responsibility for the potential project, the Sponsor agrees to comply with the provisions of the Section 221, Public Law 91-611.

We are familiar with the provisions of Title IV of the "Civil Rights Act of 1964", Public Law 88-352. We have determined that Anderson Township Park District is legally and financially capable of entering into binding and enforceable contractual agreements pursuant to the provisions of Section 221 of Public law 91-611.

	•			
.*				

It is the intention of Anderson Township Park District to use its authority in fulfilling the above listed measures of local cooperation. It is understood the purpose of this letter is to establish the Sponsor's intent and does not constitute a contract involving the expenditure of any set sum of money, nor any legal or financial actions at this time.

Sincerely,

original signed: sent as daded.

Molly McClure **Executive Director** Anderson Township Park District and cotteen time

/ DRAF

MODEL PROJECT COOPERATION AGREEMENT FOR SECTION 14

EMERGENCY STREAMBANK OR SHORELINE PROTECTION WORKS

(AUGUST 1994)

Tom Needs To Seno Sonia QN E-mail

(REVISED SEPTEMBER 1998) (REVISED NOVEMBER 2000) (REVISED NOVEMBER 2001) (REVISED JULY 2003)

Troy needs To send her or eneil

PROJECT COOPERATION AGREEMENT

BETWEEN

THE DEPARTMENT OF THE ARMY

AND

ANDERSON TOWNSHIP, OHIO PARK DISTRICT FOR CONSTRUCTION OF THE LITTLE MIAMI RIVER

ANDERSON TOWNSHIP PARK STREAMBANK EROSION STABILIZATION PROJECT ANDERSON TOWNSHIP, HAMILTON COUNTY, OHIO

#### WITNESSETH, THAT:

WHEREAS, the Little Miami River, Anderson Township Park Streambank Erosion Stabilization Project at Anderson Township, Hamilton County, Ohio (hereinafter the "Project") was approved for construction by Great lakes and Ohio River Division memorandum dated pursuant to the authority contained in Section 14 of the Flood Control Act of 1946, as amended, 33 U.S.C. 701r;

WHEREAS, the Government and the Non-Federal Sponsor desire to enter into a Project Cooperation Agreement for construction of the Little Miami River, Anderson Township Park Streambank Erosion Stabilization Project, as defined in Article I.A. of this Agreement;

WHEREAS, Section 103(a) of the Water Resources Development Act of 1986, Public Law 99-662, as amended, sets forth the cost-sharing requirements that shall apply to the Project;

WHEREAS, Section 14 of the Flood Control Act of 1946, as amended, and Government regulations which implement this statute, limit the amount the Federal Government may expend

on a single emergency streambank or shoreline protection works project to \$1,000,000;

WHEREAS, Section 221 of the Flood Control Act of 1970, Public Law 91-611, as amended, and Section 103 of the Water Resources Development Act of 1986, Public Law 99-662, as amended, provide that the Secretary of the Army shall not commence construction of any water resources project, until each non-Federal sponsor has entered into a written agreement to furnish its required cooperation for the project; and

WHEREAS, the Government and Non-Federal Sponsor have the full authority and capability to perform as hereinafter set forth and intend to cooperate in cost-sharing and financing of the Project in accordance with the terms of this Agreement.

NOW, THEREFORE, the Government and the Non-Federal Sponsor agree as follows:

### ARTICLE I - DEFINITIONS AND GENERAL PROVISIONS

For purposes of this Agreement:

A. The term "Project" shall mean construction of streambank erosion stabilization measures including a combination of longitudinal fill stone toe protection (LFSTP), brushlayering, live siltation, and bendway weirs along approximately 1,400 linear feet of the left bank of the Little Miami River. The bendway weirs will be keyed into the LFSTP. The LFSTP will have a trapezoidal cross section and will have a riverside slope of 1 vertical to 1.5 horizontal. The bendway weirs will have side and end slopes of 1 vertical to 1.5 horizontal as generally described in the Planning and Design Analysis, dated \_\_\_\_\_\_\_, 2004 and approved by the Commander, Great Lakes and Ohio River Division on \_\_\_\_\_\_\_,

B. The term "total project costs" shall mean all costs incurred by the Non-Federal Sponsor and the Government in accordance with the terms of this Agreement directly related to construction of the Project. Subject to the provisions of this Agreement, the term shall include, but is not necessarily limited to: all costs in excess of \$40,000 for planning, engineering, and design; the costs of investigations to identify the existence and extent of hazardous substances in accordance with Article XV.A. of this Agreement; costs of historic preservation activities in accordance with Article XVIII.A. of this Agreement; actual construction costs; supervision and administration costs; costs of participation in the Project Coordination Team in accordance with Article V of this Agreement; costs of contract dispute settlements or awards; the value of lands, easements, rights-of-way, relocations, and suitable borrow and dredged or excavated material disposal areas for which the Government affords credit in accordance with Article IV of this Agreement; and costs of audit in accordance with Article X of this Agreement. The term does not include any costs for operation, maintenance, repair, replacement, or rehabilitation; any costs due to betterments; or any costs of dispute resolution under Article VII of this Agreement.

- C. The term "financial obligation for construction" shall mean a financial obligation of the Government, other than an obligation pertaining to the provision of lands, easements, rights-of-way, relocations, and borrow and dredged or excavated material disposal areas, that results or would result in a cost that is or would be included in total project costs.
- D. The term "non-Federal proportionate share" shall mean the ratio of the Non-Federal Sponsor's total cash contribution required in accordance with Articles II.E.1. and II.E.3. of this Agreement to total financial obligations for construction, as projected by the Government.
- E. The term "period of construction" shall mean the time from the date the Government first notifies the Non-Federal Sponsor in writing, in accordance with Article VI.B. of this Agreement, of the scheduled date for issuance of the solicitation for the first construction contract to the date that the District Engineer notifies the Non-Federal Sponsor in writing of the Government's determination that construction of the Project is complete.
- F. The term "highway" shall mean any public highway, roadway, street, or way, including any bridge thereof.
- G. The term "relocation" shall mean providing a functionally equivalent facility to the owner of an existing utility, cemetery, highway or other public facility, or railroad (including any bridge thereof) when such action is authorized, in accordance with applicable legal principles of just compensation. Providing a functionally equivalent facility may take the form of alteration, lowering, raising, or replacement and attendant removal of the affected facility or part thereof.
- H. The term "fiscal year" shall mean one fiscal year of the Government. The Government fiscal year begins on October 1 and ends on September 30.
- I. The term "functional portion of the Project" shall mean a portion of the Project that is suitable for tender to the Non-Federal Sponsor to operate and maintain in advance of completion of the entire Project. For a portion of the Project to be suitable for tender, the District Engineer must notify the Non-Federal Sponsor in writing of the Government's determination that the portion of the Project is complete and can function independently and for a useful purpose, although the balance of the Project is not complete.
- J. The term "betterment" shall mean a change in the design and construction of an element of the Project resulting from the application of standards that the Government determines exceed those that the Government would otherwise apply for accomplishing the design and construction of that element.

# ARTICLE II - OBLIGATIONS OF THE GOVERNMENT AND THE NON-FEDERAL SPONSOR

- A. As indicated in Article I.B. of this Agreement, the first \$40,000 of the costs for planning, engineering, and design of the Project shall not be included in total project costs but shall be the sole responsibility of the Government.
- B. The Government, subject to receiving funds appropriated by the Congress of the United States and using those funds and funds provided by the Non-Federal Sponsor, shall expeditiously construct the Project, applying those procedures usually applied to Federal projects, pursuant to Federal laws, regulations, and policies.
- 1. The Government shall afford the Non-Federal Sponsor the opportunity to review and comment on the solicitations for all contracts, including relevant plans and specifications, prior to the Government's issuance of such solicitations. The Government shall not issue the solicitation for the first construction contract until the Non-Federal Sponsor has confirmed in writing its willingness to proceed with the Project. To the extent possible, the Government shall afford the Non-Federal Sponsor the opportunity to review and comment on all contract modifications, including change orders, prior to the issuance to the contractor of a Notice to Proceed. In any instance where providing the Non-Federal Sponsor with notification of a contract modification or change order is not possible prior to issuance of the Notice to Proceed, the Government shall provide such notification in writing at the earliest date possible. To the extent possible, the Government also shall afford the Non-Federal Sponsor the opportunity to review and comment on all contract claims prior to resolution thereof. The Government shall consider in good faith the comments of the Non-Federal Sponsor, but the contents of solicitations, award of contracts, execution of contract modifications, issuance of change orders, resolution of contract claims, and performance of all work on the Project (whether the work is performed under contract or by Government personnel), shall be exclusively within the control of the Government.
- 2. Throughout the period of construction, the District Engineer shall furnish the Non-Federal Sponsor with a copy of the Government's Written Notice of Acceptance of Completed Work for each contract for the Project.
- C. The Non-Federal Sponsor may request the Government to accomplish betterments. Such requests shall be in writing and shall describe the betterments requested to be accomplished. If the Government in its sole discretion elects to accomplish the requested betterments or any portion thereof, it shall so notify the Non-Federal Sponsor in a writing that sets forth any applicable terms and conditions, which must be consistent with this Agreement. In the event of conflict between such a writing and this Agreement, this Agreement shall control. The Non-Federal Sponsor shall be solely responsible for all costs due to the requested betterments and shall pay all such costs in accordance with Article VI.C. of this Agreement.

- D. When the District Engineer determines that the entire Project is complete or that a portion of the Project has become a functional portion of the Project, the District Engineer shall so notify the Non-Federal Sponsor in writing and furnish the Non-Federal Sponsor with an Operation, Maintenance, Repair, Replacement, and Rehabilitation Manual (hereinafter the "OMRR&R Manual") and with copies of all of the Government's Written Notices of Acceptance of Completed Work for all contracts for the Project or the functional portion of the Project that have not been provided previously. Upon such notification, the Non-Federal Sponsor shall operate, maintain, repair, replace, and rehabilitate the entire Project or the functional portion of the Project in accordance with Article VIII of this Agreement.
- E. The Non-Federal Sponsor shall contribute a minimum of 35 percent, but not to exceed 50 percent, of total project costs in accordance with the provisions of this paragraph.
- 1. The Non-Federal Sponsor shall provide a cash contribution equal to 5 percent of total project costs in accordance with Article VI.B. of this Agreement.
- 2. In accordance with Article III of this Agreement, the Non-Federal Sponsor shall provide all lands, easements, rights-of-way, and suitable borrow and dredged or excavated material disposal areas that the Government determines the Non-Federal Sponsor must provide for the construction, operation, and maintenance of the Project, and shall perform or ensure performance of all relocations that the Government determines to be necessary for the construction, operation, and maintenance of the Project.
- 3. If the Government projects that the value of the Non-Federal Sponsor's contributions under paragraphs E.1. and E.2. of this Article and Articles V, X, and XV.A. of this Agreement will be less than 35 percent of total project costs, the Non-Federal Sponsor shall provide an additional cash contribution, in accordance with Article VI.B. of this Agreement, in the amount necessary to make the Non-Federal Sponsor's total contribution equal to 35 percent of total project costs.
- 4. If the Government determines that the value of the Non-Federal Sponsor's contributions provided under paragraphs E.2. and E.3. of this Article and Articles V, X, and XV.A. of this Agreement has exceeded 45 percent of total project costs, the Government, subject to the availability of funds and to Article XIX of this Agreement, shall reimburse the Non-Federal Sponsor for any such value in excess of 45 percent of total project costs. After such a determination, the Government, in its sole discretion, may provide any remaining Project lands, easements, rights-of-way, and suitable borrow and dredged or excavated material disposal areas and perform any remaining Project relocations on behalf of the Non-Federal Sponsor.
- F. The Non-Federal Sponsor may request the Government to provide lands, easements, rights-of-way, and suitable borrow and dredged or excavated material disposal areas or perform relocations on behalf of the Non-Federal Sponsor. Such requests shall be in writing and shall describe the services requested to be performed. If in its sole discretion the Government elects to

perform the requested services or any portion thereof, it shall so notify the Non-Federal Sponsor in a writing that sets forth any applicable terms and conditions, which must be consistent with this Agreement. In the event of conflict between such a writing and this Agreement, this Agreement shall control. The Non-Federal Sponsor shall be solely responsible for all costs of the requested services and shall pay all such costs in accordance with Article VI.C. of this Agreement. Notwithstanding the provision of lands, easements, rights-of-way, and suitable borrow and dredged or excavated material disposal areas or performance of relocations by the Government, the Non-Federal Sponsor shall be responsible, as between the Government and the Non-Federal Sponsor, for the costs of cleanup and response in accordance with Article XV.C. of this Agreement.

- G. The Government shall perform a final accounting in accordance with Article VI.D. of this Agreement to determine the contributions provided by the Non-Federal Sponsor in accordance with paragraphs C., E., and F. of this Article and Articles V, X, and XV.A. of this Agreement and to determine whether the Non-Federal Sponsor has met its obligations under paragraphs C., E., and F. of this Article.
- H. The Non-Federal Sponsor shall not use Federal funds to meet the Non-Federal Sponsor's share of total project costs under this Agreement unless the Federal granting agency verifies in writing that the expenditure of such funds is expressly authorized by statute.

# ARTICLE III - LANDS, RELOCATIONS, DISPOSAL AREAS, AND PUBLIC LAW 91-646 COMPLIANCE

A. The Government, after consultation with the Non-Federal Sponsor, shall determine the lands, easements, and rights-of-way required for the construction, operation, and maintenance of the Project, including those required for relocations, borrow materials, and dredged or excavated material disposal. The Government in a timely manner shall provide the Non-Federal Sponsor with general written descriptions, including maps as appropriate, of the lands, easements, and rights-of-way that the Government determines the Non-Federal Sponsor must provide, in detail sufficient to enable the Non-Federal Sponsor to fulfill its obligations under this paragraph, and shall provide the Non-Federal Sponsor with a written notice to proceed with acquisition of such lands, easements, and rights-of-way. Prior to the end of the period of construction, the Non-Federal Sponsor shall acquire all lands, easements, and rights-of-way set forth in such descriptions. Furthermore, prior to issuance of the solicitation for each construction contract the Non-Federal Sponsor shall provide the Government with authorization for entry to all lands, easements, and rights-of-way the Government determines the Non-Federal Sponsor must provide for that contract. The Non-Federal Sponsor shall ensure that lands, easements, and rights-of-way that the Government determines to be required for the operation and maintenance of the Project and that were provided by the Non-Federal Sponsor are retained in public ownership for uses compatible with the authorized purposes of the Project.

- B. The Government, after consultation with the Non-Federal Sponsor, shall determine the improvements required on lands, easements, and rights-of-way to enable the proper disposal of dredged or excavated material associated with the construction, operation, and maintenance of the Project. Such improvements may include, but are not necessarily limited to, retaining dikes, wasteweirs, bulkheads, embankments, monitoring features, stilling basins, and de-watering pumps and pipes. The Government in a timely manner shall provide the Non-Federal Sponsor with general written descriptions of such improvements in detail sufficient to enable the Non-Federal Sponsor to fulfill its obligations under this paragraph, and shall provide the Non-Federal Sponsor with a written notice to proceed with construction of such improvements. Prior to the end of the period of construction, the Non-Federal Sponsor shall provide all improvements set forth in such descriptions. Furthermore, prior to issuance of the solicitation for each Government construction contract, the Non-Federal Sponsor shall prepare plans and specifications for all improvements the Government determines to be required for the proper disposal of dredged or excavated material under that contract, submit such plans and specifications to the Government for approval, and provide such improvements in accordance with the approved plans and specifications.
- C. The Government, after consultation with the Non-Federal Sponsor, shall determine the relocations necessary for the construction, operation, and maintenance of the Project, including those necessary to enable the removal of borrow materials and the proper disposal of dredged or excavated material. The Government in a timely manner shall provide the Non-Federal Sponsor with general written descriptions, including maps as appropriate, of such relocations in detail sufficient to enable the Non-Federal Sponsor to fulfill its obligations under this paragraph, and shall provide the Non-Federal Sponsor with a written notice to proceed with such relocations. Prior to the end of the period of construction, the Non-Federal Sponsor shall perform or ensure the performance of all relocations as set forth in such descriptions. Furthermore, prior to issuance of the solicitation for each Government construction contract, the Non-Federal Sponsor shall prepare or ensure the preparation of plans and specifications for, and perform or ensure the performance of, all relocations the Government determines to be necessary for that contract.
- D. The Non-Federal Sponsor in a timely manner shall provide the Government with such documents as are sufficient to enable the Government to determine the value of any contribution provided pursuant to paragraphs A., B., or C. of this Article. Upon receipt of such documents the Government, in accordance with Article IV of this Agreement and in a timely manner, shall determine the value of such contribution, include such value in total project costs, and afford credit for such value toward the Non-Federal Sponsor's share of total project costs.
- E. The Non-Federal Sponsor shall comply with the applicable provisions of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, Public Law 91-646, as amended by Title IV of the Surface Transportation and Uniform Relocation Assistance Act of 1987 (Public Law 100-17), and the Uniform Regulations contained in 49 C.F.R. Part 24, in acquiring lands, easements, and rights-of-way required for the construction, operation, and maintenance of the Project, including those necessary for relocations, borrow materials, and

dredged or excavated material disposal, and shall inform all affected persons of applicable benefits, policies, and procedures in connection with said Act.

# ARTICLE IV - CREDIT FOR VALUE OF LANDS, RELOCATIONS, AND DISPOSAL AREAS

A. The Non-Federal Sponsor shall receive credit toward its share of total project costs for the value of the lands, easements, rights-of-way, and suitable borrow and dredged or excavated material disposal areas that the Non-Federal Sponsor must provide pursuant to Article III of this Agreement, and for the value of the relocations that the Non-Federal Sponsor must perform or for which it must ensure performance pursuant to Article III of this Agreement. However, the Non-Federal Sponsor shall not receive credit for the value of any lands, easements, rights-of-way, relocations, or borrow and dredged or excavated material disposal areas that have been provided previously as an item of cooperation for another Federal project. The Non-Federal Sponsor also shall not receive credit for the value of lands, easements, rights-of-way, relocations, or borrow and dredged or excavated material disposal areas to the extent that such items are provided using Federal funds unless the Federal granting agency verifies in writing that such credit is expressly authorized by statute. Furthermore, the Non-Federal Sponsor shall not receive credit for the value of lands, easements, or rights-of-way that are part of the tract of land on which the facility or structure to be protected is located, if such tract of land was owned by either the Non-Federal Sponsor or the owner of such facility or structure on the effective date of this Agreement.

- B. For the sole purpose of affording credit in accordance with this Agreement, the value of lands, easements, and rights-of-way, including those necessary for relocations, borrow materials, and dredged or excavated material disposal, shall be the fair market value of the real property interests, plus certain incidental costs of acquiring those interests, as determined in accordance with the provisions of this paragraph.
- 1. Date of Valuation. The fair market value of lands, easements, or rights-of-way owned by the Non-Federal Sponsor on the effective date of this Agreement shall be the fair market value of such real property interests as of the date the Non-Federal Sponsor provides the Government with authorization for entry thereto. The fair market value of lands, easements, or rights-of-way acquired by the Non-Federal Sponsor after the effective date of this Agreement shall be the fair market value of such real property interests at the time the interests are acquired.
- 2. General Valuation Procedure. Except as provided in paragraph B.3. of this Article, the fair market value of lands, easements, or rights-of-way shall be determined in accordance with paragraph B.2.a. of this Article, unless thereafter a different amount is determined to represent fair market value in accordance with paragraph B.2.b. of this Article.
- a. The Non-Federal Sponsor shall obtain, for each real property interest, an appraisal that is prepared by a qualified appraiser who is acceptable to the Non-Federal Sponsor and the Government. The appraisal must be prepared in accordance with the applicable

rules of just compensation, as specified by the Government. The fair market value shall be the amount set forth in the Non-Federal Sponsor's appraisal, if such appraisal is approved by the Government. In the event the Government does not approve the Non-Federal Sponsor's appraisal, the Non-Federal Sponsor may obtain a second appraisal, and the fair market value shall be the amount set forth in the Non-Federal Sponsor's second appraisal, if such appraisal is approved by the Government. In the event the Government does not approve the Non-Federal Sponsor's second appraisal, or the Non-Federal Sponsor chooses not to obtain a second appraisal, the Government shall obtain an appraisal, and the fair market value shall be the amount set forth in the Government's appraisal, if such appraisal is approved by the Non-Federal Sponsor. In the event the Non-Federal Sponsor does not approve the Government's appraisal, the Government, after consultation with the Non-Federal Sponsor, shall consider the Government's and the Non-Federal Sponsor's appraisals and determine an amount based thereon, which shall be deemed to be the fair market value.

- b. Where the amount paid or proposed to be paid by the Non-Federal Sponsor for the real property interest exceeds the amount determined pursuant to paragraph B.2.a. of this Article, the Government, at the request of the Non-Federal Sponsor, shall consider all factors relevant to determining fair market value and, in its sole discretion, after consultation with the Non-Federal Sponsor, may approve in writing an amount greater than the amount determined pursuant to paragraph B.2.a. of this Article, but not to exceed the amount actually paid or proposed to be paid. If the Government approves such an amount, the fair market value shall be the lesser of the approved amount or the amount paid by the Non-Federal Sponsor, but no less than the amount determined pursuant to paragraph B.2.a. of this Article.
- 3. Eminent Domain Valuation Procedure. For lands, easements, or rights-of-way acquired by eminent domain proceedings instituted after the effective date of this Agreement, the Non-Federal Sponsor shall, prior to instituting such proceedings, submit to the Government notification in writing of its intent to institute such proceedings and an appraisal of the specific real property interests to be acquired in such proceedings. The Government shall have 60 days after receipt of such a notice and appraisal within which to review the appraisal, if not previously approved by the Government in writing.
- a. If the Government previously has approved the appraisal in writing, or if the Government provides written approval of, or takes no action on, the appraisal within such 60-day period, the Non-Federal Sponsor shall use the amount set forth in such appraisal as the estimate of just compensation for the purpose of instituting the eminent domain proceeding.
- b. If the Government provides written disapproval of the appraisal, including the reasons for disapproval, within such 60-day period, the Government and the Non-Federal Sponsor shall consult in good faith to promptly resolve the issues or areas of disagreement that are identified in the Government's written disapproval. If, after such good faith consultation, the Government and the Non-Federal Sponsor agree as to an appropriate amount, then the Non-Federal Sponsor shall use that amount as the estimate of just compensation for the purpose of instituting the eminent domain proceeding. If, after such good faith consultation, the

Government and the Non-Federal Sponsor cannot agree as to an appropriate amount, then the Non-Federal Sponsor may use the amount set forth in its appraisal as the estimate of just compensation for the purpose of instituting the eminent domain proceeding.

- c. For lands, easements, or rights-of-way acquired by eminent domain proceedings instituted in accordance with sub-paragraph B.3. of this Article, fair market value shall be either the amount of the court award for the real property interests taken, to the extent the Government determined such interests are required for the construction, operation, and maintenance of the Project, or the amount of any stipulated settlement or portion thereof that the Government approves in writing.
- 4. Incidental Costs. For lands, easements, or rights-of-way acquired by the Non-Federal Sponsor within a five-year period preceding the effective date of this Agreement, or at any time after the effective date of this Agreement, the value of the interest shall include the documented incidental costs of acquiring the interest, as determined by the Government, subject to an audit in accordance with Article X.C. of this Agreement to determine reasonableness, allocability, and allowability of costs. Such incidental costs shall include, but not necessarily be limited to, closing and title costs, appraisal costs, survey costs, attorney's fees, plat maps, and mapping costs, as well as the actual amounts expended for payment of any Public Law 91-646 relocation assistance benefits provided in accordance with Article III.E. of this Agreement.
- C. After consultation with the Non-Federal Sponsor, the Government shall determine the value of relocations in accordance with the provisions of this paragraph.
- 1. For a relocation other than a highway, the value shall be only that portion of relocation costs that the Government determines is necessary to provide a functionally equivalent facility, reduced by depreciation, as applicable, and by the salvage value of any removed items.
- 2. For a relocation of a highway, the value shall be only that portion of relocation costs that would be necessary to accomplish the relocation in accordance with the design standard that the State of Ohio would apply under similar conditions of geography and traffic load, reduced by the salvage value of any removed items.
- 3. Relocation costs shall include, but not necessarily be limited to, actual costs of performing the relocation; planning, engineering and design costs; supervision and administration costs; and documented incidental costs associated with performance of the relocation, but shall not include any costs due to betterments, as determined by the Government, nor any additional cost of using new material when suitable used material is available. Relocation costs shall be subject to an audit in accordance with Article X.C. of this Agreement to determine reasonableness, allocability, and allowability of costs.
- 4. Any credit afforded for the value of relocations performed within the Project boundaries is subject to satisfactory compliance with applicable Federal labor laws covering non-Federal construction, including, but not limited to, 40 U.S.C. 3141-3148 and 40 U.S.C. 3701-

3708 (revising, codifying and enacting without substantive change the provisions of the Davis-Bacon Act (formerly 40 U.S.C. 276a et seq.), the Contract Work Hours and Safety Standards Act (formerly 40 U.S.C. 327 et seq.) and the Copeland Anti-Kickback Act (formerly 40 U.S.C. 276c)). Crediting may be withheld, in whole or in part, as a result of the Non-Federal Sponsor's failure to comply with its obligations under these laws.

D. The value of the improvements made to lands, easements, and rights-of-way for the proper disposal of dredged or excavated material shall be the costs of the improvements, as determined by the Government, subject to an audit in accordance with Article X.C. of this Agreement to determine reasonableness, allocability, and allowability of costs. Such costs shall include, but not necessarily be limited to, actual costs of providing the improvements; planning, engineering and design costs; supervision and administration costs; and documented incidental costs associated with providing the improvements, but shall not include any costs due to betterments, as determined by the Government.

#### ARTICLE V - PROJECT COORDINATION TEAM

- A. To provide for consistent and effective communication, the Non-Federal Sponsor and the Government, not later than 30 days after the effective date of this Agreement, shall appoint named representatives to a Project Coordination Team. Thereafter, the Project Coordination Team shall meet regularly until the end of the period of construction. The Government's Project Manager and a counterpart named by the Non-Federal Sponsor shall co-chair the Project Coordination Team.
- B. The Government's Project Manager and the Non-Federal Sponsor's counterpart shall keep the Project Coordination Team informed of the progress of construction and of significant pending issues and actions, and shall seek the views of the Project Coordination Team on matters that the Project Coordination Team generally oversees.
- C. Until the end of the period of construction, the Project Coordination Team shall generally oversee the Project, including issues related to design; plans and specifications; scheduling; real property and relocation requirements; real property acquisition; contract awards and modifications; contract costs; the application of and compliance with 40 U.S.C. 3141-3148 and 40 U.S.C. 3701-3708 (revising, codifying and enacting without substantive change the provisions of the Davis-Bacon Act (formerly 40 U.S.C. 276a et seq.), the Contract Work Hours and Safety Standards Act (formerly 40 U.S.C. 327 et seq.) and the Copeland Anti-Kickback Act (formerly 40 U.S.C. 276c)) for relocations; the Government's cost projections; final inspection of the entire Project or functional portions of the Project; preparation of the proposed OMRR&R Manual; anticipated requirements and needed capabilities for performance of operation, maintenance, repair, replacement, and rehabilitation of the Project; and other related matters.
- D. The Project Coordination Team may make recommendations that it deems warranted to the District Engineer on matters that the Project Coordination Team generally oversees,

including suggestions to avoid potential sources of dispute. The Government in good faith shall consider the recommendations of the Project Coordination Team. The Government, having the legal authority and responsibility for construction of the Project, has the discretion to accept, reject, or modify the Project Coordination Team's recommendations.

E. The costs of participation in the Project Coordination Team shall be included in total project costs and cost shared in accordance with the provisions of this Agreement.

### ARTICLE VI - METHOD OF PAYMENT

[FOR ARTICLE VI USE OPTION I IF CONSTRUCTION OF THE "PROJECT" WILL BE COMPLETED WITHIN ONE FISCAL YEAR OR IF THE NON-FEDERAL SPONSOR ELECTS TO PROVIDE ITS SHARE IN ONE LUMP SUM. OTHERWISE, USE OPTION II.]

#### **OPTION I**

A. The Government shall maintain current records of contributions provided by the parties and current projections of total project costs and costs due to betterments. At least quarterly, the Government shall provide the Non-Federal Sponsor with a report setting forth all contributions provided to date and the current projections of total project costs, of total costs due to betterments, of the components of total project costs, of each party's share of total project costs, of the Non-Federal Sponsor's total cash contributions required in accordance with Articles II.C., II.E., and II.F. of this Agreement, and of the non-Federal proportionate share. On the effective date of this Agreement, total project costs are projected to be \$1,150,000, and the Non-Federal Sponsor's cash contribution required under Article II.E. of this Agreement is projected to be \$388,500. Such amounts are estimates subject to adjustment by the Government and are not to be construed as the total financial responsibilities of the Government and the Non-Federal Sponsor.

[ARTICLE VI.B. OFFERS THE NON-FEDERAL SPONSOR FOUR MECHANISMS FROM WHICH TO CHOOSE IN DECIDING HOW TO PROVIDE ITS REQUIRED MONETARY CONTRIBUTION TO THE FEDERAL GOVERNMENT. THE NON-FEDERAL SPONSOR SHOULD INDICATE ITS CHOICE DURING THE COURSE OF NEGOTIATING THE AGREEMENT, SUBJECT TO THE APPROVAL OF THE DISTRICT ENGINEER, AND IN ACCORDANCE WITH GUIDANCE GOVERNING THE USE OF ELECTRONIC FUNDS TRANSFERS, ESCROW AGREEMENTS, AND IRREVOCABLE LETTERS OF CREDIT. HOWEVER, THE NON-FEDERAL SPONSOR MAY USE ANY OF THE METHODS OR A COMBINATION OF THEM, DURING THE LIFE OF THE AGREEMENT. DO NOT DELETE ANY OF THE FOUR MECHANISMS.]

B. The Non-Federal Sponsor shall provide the cash contribution required under Articles II.E.1. and II.E.3. of this Agreement in accordance with the following provisions: Not less than [NUMBER OF DAYS, 30 OR MORE] calendar days prior to the scheduled date for issuance of the solicitation for the first construction contract, the Government shall notify the Non-Federal Sponsor in writing of such scheduled date and the funds the Government determines to be required from the Non-Federal Sponsor to meet its projected cash contribution under Articles II.E.1. and II.E.3. of this Agreement. Not later than such scheduled date, the Non-Federal Sponsor shall provide the Government with the full amount of the required funds by delivering a check payable to "FAO, USAED, LOUISVILLE" to the District Engineer or verifying to the satisfaction of the Government that the Non-Federal Sponsor has deposited the required funds in an escrow or other account acceptable to the Government, with interest accruing to the Non-Federal Sponsor or presenting the Government with an irrevocable letter of credit acceptable to the Government for the required funds or providing an Electronic Funds Transfer in accordance with procedures established by the Government. The Government shall draw from the funds provided by the Non-Federal Sponsor such sums as the Government deems necessary to cover: (a) the non-Federal proportionate share of financial obligations for construction incurred prior to the commencement of the period of construction; and (b) the non-Federal proportionate share of financial obligations for construction as they are incurred during the period of construction. In the event the Government determines that the Non-Federal Sponsor must provide additional funds to meet the Non-Federal Sponsor's cash contribution, the Government shall notify the Non-Federal Sponsor in writing of the additional funds required and provide an explanation of why additional funds are required. Within [NOT TO EXCEED 60 - SEE NOTE 1 BELOW] calendar days thereafter, the Non-Federal Sponsor shall provide the Government with the full amount of the additional required funds through any of the payment mechanisms specified above. [EXPLANATORY NOTES: 1) THE LENGTH OF TIME SHOULD NOT EXCEED THE TIME SHOWN UNLESS THE DISTRICT ENGINEER APPROVES A LONGER PERIOD OF TIME. 2) IF ADDITIONAL FUNDS ARE REQUIRED FROM THE NON-FEDERAL SPONSOR, THEY SHOULD BE REQUESTED IMMEDIATELY. NEITHER PARTY'S FUNDS SHOULD BE USED TO MEET ANY SHORTFALL IN THE OTHER PARTY'S FUNDS.]

#### OPTION II

A. The Government shall maintain current records of contributions provided by the parties and current projections of total project costs and costs due to betterments. By [SPECIFIC DATE, BASED ON THE TIMING OF THE NON-FEDERAL SPONSOR'S FISCAL CYCLE] of each year and at least quarterly thereafter, the Government shall provide the Non-Federal Sponsor with a report setting forth all contributions provided to date and the current projections of total project costs, of total costs due to betterments. of the components of total project costs, of each party's share of total project costs, of the Non-Federal Sponsor's total cash contributions required in accordance with Articles II.C., II.E., and II.F. of this Agreement, of the non-Federal proportionate share, and of the funds the Government projects to be required from the Non-Federal Sponsor for the upcoming fiscal year. On the effective date of this Agreement, total project costs are projected to be \$1.175,000, and the Non-Federal Sponsor's

cash contribution required under Article II.E. of this Agreement is projected to be \$368,250. Such amounts are estimates subject to adjustment by the Government and are not to be construed as the total financial responsibilities of the Government and the Non-Federal Sponsor.

B. The Non-Federal Sponsor shall provide the cash contribution required under Articles II.E.1. and II.E.3. of this Agreement in accordance with the provisions of this paragraph.

[ARTICLE VI.B.1. OFFERS THE NON-FEDERAL SPONSOR FOUR MECHANISMS FROM WHICH TO CHOOSE IN DECIDING HOW TO PROVIDE ITS REQUIRED MONETARY CONTRIBUTION TO THE FEDERAL GOVERNMENT. THE NON-FEDERAL SPONSOR SHOULD INDICATE ITS CHOICE DURING THE COURSE OF NEGOTIATING THE AGREEMENT, SUBJECT TO THE APPROVAL OF THE DISTRICT ENGINEER, AND IN ACCORDANCE WITH GUIDANCE GOVERNING THE USE OF ELECTRONIC FUNDS TRANSFERS, ESCROW AGREEMENTS, AND IRREVOCABLE LETTERS OF CREDIT. HOWEVER, THE NON-FEDERAL SPONSOR MAY USE ANY OF THE METHODS OR A COMBINATION OF THEM, DURING THE LIFE OF THE AGREEMENT. DO NOT DELETE ANY OF THE FOUR MECHANISMS.]

- 1. Not less than [NUMBER OF DAYS, 30 OR MORE] calendar days prior to the scheduled date for issuance of the solicitation for the first construction contract, the Government shall notify the Non-Federal Sponsor in writing of such scheduled date and the funds the Government determines to be required from the Non-Federal Sponsor to meet the non-Federal proportionate share of projected financial obligations for construction through the first fiscal year of construction, including the non-Federal proportionate share of financial obligations for construction incurred prior to the commencement of the period of construction. Not later than such scheduled date, the Non-Federal Sponsor shall provide the Government with the full amount of the required funds by delivering a check payable to "FAO, USAED, LOUISVILLE" to the District Engineer or verifying to the satisfaction of the Government that the Non-Federal Sponsor has deposited the required funds in an escrow or other account acceptable to the Government, with interest accruing to the Non-Federal Sponsor or presenting the Government with an irrevocable letter of credit acceptable to the Government for the required funds or providing an Electronic Funds Transfer in accordance with procedures established by the Government.
- 2. For the second and subsequent fiscal years of construction, the Government shall notify the Non-Federal Sponsor in writing, no later than 60 calendar days prior to the beginning of that fiscal year, of the funds the Government determines to be required from the Non-Federal Sponsor to meet the non-Federal proportionate share of projected financial obligations for construction for that fiscal year. No later than 30 calendar days prior to the beginning of the fiscal year, the Non-Federal Sponsor shall make the full amount of the required funds for that fiscal year available to the Government through any of the payment mechanisms specified in Article VI.B.1. of this Agreement.

- 3. The Government shall draw from the funds provided by the Non-Federal Sponsor such sums as the Government deems necessary to cover: (a) the non-Federal proportionate share of financial obligations for construction incurred prior to the commencement of the period of construction; and (b) the non-Federal proportionate share of financial obligations for construction as they are incurred during the period of construction.
- 4. If at any time during the period of construction the Government determines that additional funds will be needed from the Non-Federal Sponsor to cover the non-Federal proportionate share of projected financial obligations for construction for the current fiscal year, the Government shall notify the Non-Federal Sponsor in writing of the additional funds required, and provide an explanation of why additional funds are required, and the Non-Federal Sponsor, no later than [NOT TO EXCEED 60 SEE NOTE 1 BELOW] calendar days from receipt of such notice, shall make the additional required funds available through any of the payment mechanisms specified in Article VI.B.1. of this Agreement. [EXPLANATORY NOTES: 1) THE LENGTH OF TIME SHOULD NOT EXCEED THE TIME SHOWN UNLESS THE DISTRICT ENGINEER APPROVES A LONGER PERIOD OF TIME. 2) IF ADDITIONAL FUNDS ARE REQUIRED FROM THE NON-FEDERAL SPONSOR, THEY SHOULD BE REQUESTED IMMEDIATELY. NEITHER PARTY'S FUNDS SHOULD BE USED TO MEET ANY SHORTFALL IN THE OTHER PARTY'S FUNDS.]

# [INCLUDE PARAGRAPHS C. AND D. FOR BOTH OPTIONS I AND II IN ARTICLE VI.]

- C. In advance of the Government incurring any financial obligation associated with additional work under Article II.C. or II.F. of this Agreement, the Non-Federal Sponsor shall provide the Government with the full amount of the funds required to pay for such additional work through any of the payment mechanisms specified in Article VI.B.1. of this Agreement. The Government shall draw from the funds provided by the Non-Federal Sponsor such sums as the Government deems necessary to cover the Government's financial obligations for such additional work as they are incurred. In the event the Government determines that the Non-Federal Sponsor must provide additional funds to meet its cash contribution, the Government shall notify the Non-Federal Sponsor in writing of the additional funds required and provide an explanation of why additional funds are required. Within [NOT TO EXCEED 30 - SEE NOTE 1 BELOW] calendar days thereafter, the Non-Federal Sponsor shall provide the Government with the full amount of the additional required funds through any of the payment mechanisms specified in Article VI.B.1. of this Agreement. [EXPLANATORY NOTES: 1) THE LENGTH OF TIME SHOULD NOT EXCEED THE TIME SHOWN UNLESS THE DISTRICT ENGINEER APPROVES A LONGER PERIOD OF TIME. 2) IF ADDITIONAL FUNDS ARE REQUIRED FROM THE NON-FEDERAL SPONSOR. THEY SHOULD BE REQUESTED IMMEDIATELY. NEITHER PARTY'S FUNDS SHOULD BE USED TO MEET ANY SHORTFALL IN THE OTHER PARTY'S FUNDS.
- D. Upon completion of the Project or termination of this Agreement, and upon resolution of all relevant claims and appeals, the Government shall conduct a final accounting and furnish

the Non-Federal Sponsor with the results of the final accounting. The final accounting shall determine total project costs, each party's contribution provided thereto, and each party's required share thereof. The final accounting also shall determine costs due to betterments and the Non-Federal Sponsor's cash contribution provided pursuant to Article II.C. of this Agreement.

- 1. In the event the final accounting shows that the total contribution provided by the Non-Federal Sponsor is less than its required share of total project costs plus costs due to any betterments provided in accordance with Article II.C. of this Agreement, the Non-Federal Sponsor shall, no later than 90 calendar days after receipt of written notice, make a cash payment to the Government of whatever sum is required to meet the Non-Federal Sponsor's required share of total project costs plus costs due to any betterments provided in accordance with Article II.C. of this Agreement by delivering a check payable to "FAO, USAED, LOUISVILLE" to the District Engineer or providing an Electronic Funds Transfer in accordance with procedures established by the Government.
- 2. In the event the final accounting shows that the total contribution provided by the Non-Federal Sponsor exceeds its required share of total project costs plus costs due to any betterments provided in accordance with Article II.C. of this Agreement, the Government shall, subject to the availability of funds and to Article XIX of this Agreement, refund the excess to the Non-Federal Sponsor no later than 90 calendar days after the final accounting is complete; however, the Non-Federal Sponsor shall not be entitled to any refund of the 5 percent cash contribution required pursuant to Article II.E.1. of this Agreement. In the event existing funds are not available to refund the excess to the Non-Federal Sponsor, the Government shall seek such appropriations as are necessary to make the refund.

#### ARTICLE VII - DISPUTE RESOLUTION

As a condition precedent to a party bringing any suit for breach of this Agreement, that party must first notify the other party in writing of the nature of the purported breach and seek in good faith to resolve the dispute through negotiation. If the parties cannot resolve the dispute through negotiation, they may agree to a mutually acceptable method of non-binding alternative dispute resolution with a qualified third party acceptable to both parties. The parties shall each pay 50 percent of any costs for the services provided by such a third party as such costs are incurred. The existence of a dispute shall not excuse the parties from performance pursuant to this Agreement.

# ARTICLE VIII - OPERATION, MAINTENANCE, REPAIR, REPLACEMENT, AND REHABILITATION (OMRR&R)

A. Upon notification in accordance with Article II.D. of this Agreement and for so long as the Project remains authorized, the Non-Federal Sponsor shall operate, maintain, repair, replace, and rehabilitate the entire Project or the functional portion of the Project, at no cost to

the Government, in a manner compatible with the Project's authorized purposes and in accordance with applicable Federal and State laws as provided in Article XI of this Agreement and specific directions prescribed by the Government in the OMRR&R Manual and any subsequent amendments thereto.

B. The Non-Federal Sponsor hereby gives the Government a right to enter, at reasonable times and in a reasonable manner, upon property that the Non-Federal Sponsor owns or controls for access to the Project for the purpose of inspection and, if necessary, for the purpose of completing, operating, maintaining, repairing, replacing, or rehabilitating the Project. If an inspection shows that the Non-Federal Sponsor for any reason is failing to perform its obligations under this Agreement, the Government shall send a written notice describing the non-performance to the Non-Federal Sponsor. If, after 30 calendar days from receipt of notice, the Non-Federal Sponsor continues to fail to perform, then the Government shall have the right to enter, at reasonable times and in a reasonable manner, upon property that the Non-Federal Sponsor owns or controls for access to the Project for the purpose of completing, operating, maintaining, repairing, replacing, or rehabilitating the Project. No completion, operation, maintenance, repair, replacement, or rehabilitation by the Government shall operate to relieve the Non-Federal Sponsor of responsibility to meet the Non-Federal Sponsor's obligations as set forth in this Agreement, or to preclude the Government from pursuing any other remedy at law or equity to ensure faithful performance pursuant to this Agreement.

[INCLUDE THE PHRASE SHOWN IN BRACKETS ONLY IF ARTICLE XX - OBLIGATIONS OF FUTURE APPROPRIATIONS IS INCLUDED IN THE PCA AND THE NON-FEDERAL SPONSOR REQUESTS THIS LANGUAGE. IN ADDITION, DELETE THE SECOND OCCURRENCE OF "THE".]

#### ARTICLE IX - INDEMNIFICATION

[Subject to the provisions of Article XX of this Agreement, the] The Non-Federal Sponsor shall hold and save the Government free from all damages arising from the construction, operation, maintenance, repair, replacement, and rehabilitation of the Project and any Project-related betterments, except for damages due to the fault or negligence of the Government or its contractors.

### ARTICLE X - MAINTENANCE OF RECORDS AND AUDIT

A. Not later than 60 calendar days after the effective date of this Agreement, the Government and the Non-Federal Sponsor shall develop procedures for keeping books, records, documents, and other evidence pertaining to costs and expenses incurred pursuant to this Agreement. These procedures shall incorporate, and apply as appropriate, the standards for financial management systems set forth in the Uniform Administrative Requirements for Grants and Cooperative Agreements to State and Local Governments at 32 C.F.R. Section 33.20. The Government and the Non-Federal Sponsor shall maintain such books, records, documents, and

other evidence in accordance with these procedures and for a minimum of three years after the period of construction and resolution of all relevant claims arising therefrom. To the extent permitted under applicable Federal laws and regulations, the Government and the Non-Federal Sponsor shall each allow the other to inspect such books, documents, records, and other evidence.

B. Pursuant to 32 C.F.R. Section 33.26, the Non-Federal Sponsor is responsible for complying with the Single Audit Act of 1984, 31 U.S.C. Sections 7501-7507, as implemented by Office of Management and Budget (OMB) Circular No. A-133 and Department of Defense Directive 7600.10. Upon request of the Non-Federal Sponsor and to the extent permitted under applicable Federal laws and regulations, the Government shall provide to the Non-Federal Sponsor and independent auditors any information necessary to enable an audit of the Non-Federal Sponsor's activities under this Agreement. The costs of any non-Federal audits performed in accordance with this paragraph shall be allocated in accordance with the provisions of OMB Circulars A-87 and A-133, and such costs as are allocated to the Project shall be included in total project costs and cost shared in accordance with the provisions of this Agreement.

C. In accordance with 31 U.S.C. Section 7503, the Government may conduct audits in addition to any audit that the Non-Federal Sponsor is required to conduct under the Single Audit Act. Any such Government audits shall be conducted in accordance with Government Auditing Standards and the cost principles in OMB Circular No. A-87 and other applicable cost principles and regulations. The costs of Government audits performed in accordance with this paragraph shall be included in total project costs and cost shared in accordance with the provisions of this Agreement.

#### ARTICLE XI - FEDERAL AND STATE LAWS

In the exercise of their respective rights and obligations under this Agreement, the Non-Federal Sponsor and the Government agree to comply with all applicable Federal and State laws and regulations, including, but not limited to: Section 601 of the Civil Rights Act of 1964, Public Law 88-352 (42 U.S.C. 2000d) and Department of Defense Directive 5500.11 issued pursuant thereto; Army Regulation 600-7, entitled "Nondiscrimination on the Basis of Handicap in Programs and Activities Assisted or Conducted by the Department of the Army"; and all applicable Federal labor standards requirements including, but not limited to, 40 U.S.C. 3141-3148 and 40 U.S.C. 3701-3708 (revising, codifying and enacting without substantive change the provisions of the Davis-Bacon Act (formerly 40 U.S.C. 276a et seq.), the Contract Work Hours and Safety Standards Act (formerly 40 U.S.C. 327 et seq.) and the Copeland Anti-Kickback Act (formerly 40 U.S.C. 276c)).

### ARTICLE XII - RELATIONSHIP OF PARTIES

- A. In the exercise of their respective rights and obligations under this Agreement, the Government and the Non-Federal Sponsor each act in an independent capacity, and neither is to be considered the officer, agent, or employee of the other.
- B. In the exercise of its rights and obligations under this Agreement, neither party shall provide, without the consent of the other party, any contractor with a release that waives or purports to waive any rights such other party may have to seek relief or redress against such contractor either pursuant to any cause of action that such other party may have or for violation of any law.

#### ARTICLE XIII - OFFICIALS NOT TO BENEFIT

No member of or delegate to the Congress, nor any resident commissioner, shall be admitted to any share or part of this Agreement, or to any benefit that may arise therefrom.

#### ARTICLE XIV - TERMINATION OR SUSPENSION

- A. If at any time the Non-Federal Sponsor fails to fulfill its obligations under Article II.C., II.E., II.F., VI, or XVIII.C. of this Agreement, the Assistant Secretary of the Army (Civil Works) shall terminate this Agreement or suspend future performance under this Agreement unless he determines that continuation of work on the Project is in the interest of the United States or is necessary in order to satisfy agreements with any other non-Federal interests in connection with the Project.
- B. If the Government fails to receive annual appropriations in amounts sufficient to meet Project expenditures for the then-current or upcoming fiscal year, the Government shall so notify the Non-Federal Sponsor in writing, and 60 calendar days thereafter either party may elect without penalty to terminate this Agreement or to suspend future performance under this Agreement. In the event that either party elects to suspend future performance under this Agreement pursuant to this paragraph, such suspension shall remain in effect until such time as the Government receives sufficient appropriations or until either the Government or the Non-Federal Sponsor elects to terminate this Agreement, whichever occurs first.
- C. In the event that either party elects to terminate this Agreement pursuant to this Article or Article XV of this Agreement, both parties shall conclude their activities relating to the Project and proceed to a final accounting in accordance with Article VI.D. of this Agreement.
- D. Any termination of this Agreement or suspension of future performance under this Agreement in accordance with this Article or Article XV of this Agreement shall not relieve the parties of liability for any obligation previously incurred. Any delinquent payment shall be

charged interest at a rate, to be determined by the Secretary of the Treasury, equal to 150 per centum of the average bond equivalent rate of the 13-week Treasury bills auctioned immediately prior to the date on which such payment became delinquent, or auctioned immediately prior to the beginning of each additional 3-month period if the period of delinquency exceeds 3 months.

#### ARTICLE XV - HAZARDOUS SUBSTANCES

A. After execution of this Agreement and upon direction by the District Engineer, the Non-Federal Sponsor shall perform, or cause to be performed, any investigations for hazardous substances that the Government or the Non-Federal Sponsor determines to be necessary to identify the existence and extent of any hazardous substances regulated under the Comprehensive Environmental Response, Compensation, and Liability Act (hereinafter "CERCLA"), 42 U.S.C. Sections 9601-9675, that may exist in, on, or under lands, easements, and rights-of-way that the Government determines, pursuant to Article III of this Agreement, to be required for the construction, operation, and maintenance of the Project. However, for lands that the Government determines to be subject to the navigation servitude, only the Government shall perform such investigations unless the District Engineer provides the Non-Federal Sponsor with prior specific written direction, in which case the Non-Federal Sponsor shall perform such investigations in accordance with such written direction. All actual costs incurred by the Non-Federal Sponsor for such investigations for hazardous substances shall be included in total project costs and cost shared in accordance with the provisions of this Agreement, subject to an audit in accordance with Article X.C. of this Agreement to determine reasonableness, allocability, and allowability of costs.

- B. In the event it is discovered through any investigation for hazardous substances or other means that hazardous substances regulated under CERCLA exist in, on, or under any lands, easements, or rights-of-way that the Government determines, pursuant to Article III of this Agreement, to be required for the construction, operation, and maintenance of the Project, the Non-Federal Sponsor and the Government, in addition to providing any other notice required by applicable law, shall provide prompt written notice to each other, and the Non-Federal Sponsor shall not proceed with the acquisition of the real property interests until both parties agree that the Non-Federal Sponsor should proceed.
- C. The Government and the Non-Federal Sponsor shall determine whether to initiate construction of the Project, or, if already in construction, whether to continue with work on the Project, suspend future performance under this Agreement, or terminate this Agreement for the convenience of the Government, in any case where hazardous substances regulated under CERCLA are found to exist in, on, or under any lands, easements, or rights-of-way that the Government determines, pursuant to Article III of this Agreement, to be required for the construction, operation, and maintenance of the Project. Should the Government and the Non-Federal Sponsor determine to initiate or continue with construction after considering any liability that may arise under CERCLA, the Non-Federal Sponsor shall be responsible, as between the Government and the Non-Federal Sponsor, for the costs of clean-up and response, to include the

20

costs of any studies and investigations necessary to determine an appropriate response to the contamination. Such costs shall not be considered a part of total project costs. In the event the Non-Federal Sponsor fails to provide any funds necessary to pay for clean up and response costs or to otherwise discharge the Non-Federal Sponsor's responsibilities under this paragraph upon direction by the Government, the Government may, in its sole discretion, either terminate this Agreement for the convenience of the Government, suspend future performance under this Agreement, or continue work on the Project.

- D. The Non-Federal Sponsor and the Government shall consult with each other in accordance with Article V of this Agreement in an effort to ensure that responsible parties bear any necessary clean up and response costs as defined in CERCLA. Any decision made pursuant to paragraph C. of this Article shall not relieve any third party from any liability that may arise under CERCLA.
- E. As between the Government and the Non-Federal Sponsor, the Non-Federal Sponsor shall be considered the operator of the Project for purposes of CERCLA liability. To the maximum extent practicable, the Non-Federal Sponsor shall operate, maintain, repair, replace, and rehabilitate the Project in a manner that will not cause liability to arise under CERCLA.

## ARTICLE XVI - NOTICES

A. Any notice, request, demand, or other communication required or permitted to be given under this Agreement shall be deemed to have been duly given if in writing and either delivered personally or by telegram or mailed by first-class, registered, or certified mail, as follows:

If to the Non-Federal Sponsor:

EXECUTIVE DIRECTOR ANDERSON TOWNSHIP PARK DISTRICT 8429 CLOUGH PIKE CINCINNATI, OH 45244

If to the Government:

COLONEL, CORPS OF ENGINEERS
COMMANDER AND DISTRICT ENGINEER
U.S. ARMY ENGINEERING DISTRICT, LOUISVILLE
P.O. BOX 59
LOUISVILLE, KENTUCKY 40201-0059

B. A party may change the address to which such communications are to be directed by giving written notice to the other party in the manner provided in this Article.

21

C. Any notice, request, demand, or other communication made pursuant to this Article shall be deemed to have been received by the addressee at the earlier of such time as it is actually received or seven calendar days after it is mailed.

#### ARTICLE XVII - CONFIDENTIALITY

To the extent permitted by the laws governing each party, the parties agree to maintain the confidentiality of exchanged information when requested to do so by the providing party.

## ARTICLE XVIII - HISTORIC PRESERVATION

A. The costs of identification, survey and evaluation of historic properties shall be included in total project costs and cost shared in accordance with the provisions of this Agreement.

- B. As specified in Section 7(a) of Public Law 93-291 (16 U.S.C. Section 469c(a)), the costs of mitigation and data recovery activities associated with historic preservation shall be borne entirely by the Government and shall not be included in total project costs, up to the statutory limit of one percent of the total amount the Government is authorized to expend for the Project.
- C. The Government shall not incur costs for mitigation and data recovery that exceed the statutory one percent limit specified in paragraph B. of this Article unless and until the Assistant Secretary of the Army (Civil Works) has waived that limit in accordance with Section 208(3) of Public Law 96-515 (16 U.S.C. Section 469c-2(3)). Any costs of mitigation and data recovery that exceed the one percent limit shall not be included in total project costs but shall be cost shared between the Non-Federal Sponsor and the Government consistent with the minimum non-Federal cost sharing requirements for the underlying flood control purpose, as follows: 35 percent borne by the Non-Federal Sponsor, and 65 percent borne by the Government.

## ARTICLE XIX - LIMITATION ON GOVERNMENT COSTS

The Government's financial participation in the Project is limited to \$1,000,000. Notwithstanding any other provision of this Agreement, the Non-Federal Sponsor shall be responsible for all costs in excess of this amount.

[INCLUDE ARTICLE XX ONLY IF THE NON-FEDERAL SPONSOR IS A STATE AGENCY OR A POLITICAL SUB-DIVISION OF THE STATE THAT DERIVES ITS FUNDS FOR THE PROJECT DIRECTLY FROM APPROPRIATIONS AND THE NON-FEDERAL SPONSOR HAS CONSTITUTIONAL OR STATUTORY LIMITATIONS

PROHIBITING IT FROM COMMITTING FUTURE APPROPRIATIONS. THE INFORMATION TO BE ADDED IN ARTICLE XX.A. SHOULD IDENTIFY THE BODY THAT MAKES THE APPROPRIATIONS (EXAMPLE: LEGISLATURE OF THE STATE OF OHIO OR CITY COUNSEL OF THE CITY OF CLEVELAND).]

[INCLUDE THE TEXT IN BRACKETS IF REQUESTED BY THE NON-FEDERAL SPONSOR. THE INFORMATION TO BE ADDED IN THIS OPTIONAL PHRASE SHOULD PROVIDE MORE DETAILED INFORMATION ON THE LOCATION OF THE RESTRICTION TO CREATING AN OBLIGATION OF FUTURE APPROPRIATIONS (EXAMPLE: SECTION 7 OF THE CITY CHARTER OF CLEVELAND).]

## ARTICLE XX - OBLIGATIONS OF FUTURE APPROPRIATIONS

appr wou	A. Nothing herein shall concopriations by the of Id be inconsistent with	stitute, nor be the of the	e deem	ned to constitute, an obligation of future [, where creating such an obligation of].
Agree approhered disch purpo sufficients its ob	Federal Sponsor shall include in detail and appropriations sufficient to dement for each year, and will use opinations for that year sufficient ander. The Non-Federal Sponsorange these obligations can and use. In the event the budget or defent amounts to discharge these is to satisfy any requirements for legally available for this purpolligations hereunder, the Government's interests related to this	in its budget recover the Non- se all reasonal at to make the or reasonably will lawfully bother means of e obligations, r payments un se. Further, in ment may exist s Agreement.	equest -Feder ble and paymo believ be appro f appro the No ader th f the N ercise	ents necessary to fulfill its obligations es that funds in amounts sufficient to ropriated and made available for this opriations does not provide funds in on-Federal Sponsor shall use its best as Agreement from any other source of Non-Federal Sponsor is unable to satisfy any legal rights it has to protect the
TH	E DEPARTMENT OF THE AI	RMY		E ANDERSON TOWNSHIP, OHIO RK DISTRICT
BY:	Robert A. Rowlette, Jr. Colonel, Corps of Engineers Commander and District Engineers	 neer	BY:	Molly McClure Executive Director Anderson Township Park District

DATE:	DATE:	

## CERTIFICATE OF AUTHORITY

I,, do hereby certify that I am the principal legal officer of the
Anderson Township Park District, that the Anderson Township Park District is a legally
constituted public body with full authority and legal capability to perform the terms of the
Agreement between the Department of the Army and the Anderson Township Park District in
connection with the Little Miami River, Anderson Township Park Streambank Erosion
Stabilization Project and to pay damages in accordance with the terms of this Agreement, if
necessary, in the event of the failure to perform, as required by Section 221 of Public Law 91-611
(42 U.S.C. Section 1962d-5b), and that the persons who have executed this Agreement on behalf
of the Anderson Township Park District have acted within their statutory authority.
IN WITNESS WHEREOF, I have made and executed this certification this day of 20
om Luebbers
anderson Township Park District Attorney

## CERTIFICATION REGARDING LOBBYING

The undersigned certifies, to the best of his or her knowledge and belief that:

- (1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
- (2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.
- (3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Section 1352, Title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

-	AcClure ve Director	 	
DATE:		 	

Mike,

There are a couple of things I want to bring to your attention about this agreement.

First, the project we plan to implement with The U.S. Army Corps of Engineers will stabilize the bank on your property, which is currently unstable at absolutely no cost to you. The total cost of this project is \$1,150,000 with Anderson's portion being approximately \$400,000. Not only does the stabilization cost you nothing, on-going maintenance of the stabilization project is Anderson's responsibility as well.

Second, we will have a map, legal description and appraisal to attach to this agreement as well. You would have the option to accept the appraised value of the easement or waive receipt of that amount. If you waive receipt of that amount, Anderson will still get credit for that amount toward it's \$400,000 cost share. There may be tax advantages for you to donate this easement. I'm not sure.

Thanks for your help with this project. I know we've all been fighting to stabilize the riverbank for years. Finally, we have everything aligning to accomplish it. I'm confident this stabilization project will be very beneficial to the owners of Indian Valley Golf Course, whether it's you or otherwise.

Thanks again,

Troy

# GRANT AND DECLARATION OF PRIVATE CHANNEL IMPROVEMENT, STREAMBANK EROSION STABILIZATION, AND CONSTRUCTION EASEMENT

This grant and declaration of easement (hereinafter "Declaration") is made as of the \_\_\_\_\_ day of \_\_\_\_\_, 2004, by and between Indian Valley Land Co. Ltd., an Ohio limited liability company (hereinafter "Grantor") and Anderson Township Park District, a political subdivision for the State of Ohio, (hereinafter "Grantee").

WHEREAS, Grantor and Grantee are the owners of contiguous parcels of real estate located in the Township of Anderson, County of Hamilton, State of Ohio which border on a waterway; and WHEREAS,

Grantor and Grantee desire to fully establish and declare a permanent easement over and upon parts Grantor's property on the terms and conditions provided herein for access by Grantee to said watercourse so as to improve the watercourse channel, stabilize the streambank and slow or stop erosion of the streambank.

NOW, THEREFORE, for and in consideration of Grantee's restoration of Grantor's real property and further in consideration of Grantor either receiving just compensation from Grantee or in the alternative, waiving said right to just compensation (See waiver attached hereto as Exhibit "A") the parties hereby establish and declare a permanent easement and Grantor hereby grants a perpetual and assignable right and easement to construct, operate, and maintain channel improvement works on, over and across the land described in Schedule A for the purposes as authorized by the Act of Congress approved \_\_\_\_\_\_\_\_, including the right to clear, cut, fell, remove and dispose of any and all timber, trees, underbrush, buildings, improvements and/or other obstructions therefrom; to excavate, dredge, cut away, and remove any or all of the said land and to place thereon dredge or spoil material; and for such other purposes as may be required in connection with the said work of improvement; reserving, however, to the owners, their heirs and assigns, all such rights and privileges as may be used without interfering with or abridging the rights and easement hereby acquired; subject, however, to existing easements for public roads and highways, public utilities, railroads and pipelines. Grantor and Grantee make the following described agreements pertaining to said easement:

1. Grantor hereby grants, establishes and declares to and for the benefit of Grantee and its successors and assigns and for the use and benefit of Grantee's guests, invitees, visitors, employees, contractors and all persons

properly using the same, a non-exclusive permanent easement appurtenant over and upon the easement area set forth in "Exhibit A" attached hereto and incorporated herein by this reference (hereinafter " Easement Area"). The Easement Area is for the purpose of providing a permanent area for the construction and maintenance of channel and erosion prevention works for the benefit of Grantee's adjoining property.

- 2. It is agreed by Grantor and Grantee that the easement granted herein includes the right to lay, construct, maintain, repair and reconstruct, and remove such ordinary and necessary structures as are deemed necessary or appropriate for a Channel Improvement and Streambank Erosion Stabilization easement as may be necessary, along, through, under, across and upon the Easement Area all at Grantee's expense and liability.
- 3. In addition, the parties hereto agree that also hereby granted is the right of ingress and egress in and over the lands of Grantor to the extent necessary and other reasonable routes to and upon and along the Easement Area at such times and at such points as may reasonably be necessary for the construction, maintenance and/or reconstruction of the works located on the Easement Area 4. The parties hereto each agree that Grantor shall have the right to use that portion of Grantor's property that is over and/or upon the Easement Area for any purpose provided the same does not in any way interfere with the full and free use of the Easement Area for the purposes herein stated, and provided further that no building or other structure shall be erected upon, across, over or through the Easement Area except as contemplated herein and Grantor agrees that Grantor will not excavate or fill within the Easement Area or immediately adjacent thereto as to interfere with the use of the Easement Area for the purposes intended herein or to effect the structures thereon.
- 7. The cost of and expense of creating and maintaining the Easement Area and the structures thereon, if any, to be maintained shall be borne by Grantee.
- 8. It is the intent of Grantor and Grantee that the within Easement shall run with Grantor's and Grantee's real estate and it is intended to benefit in perpetuity and shall be binding upon all owners of the Grantor's and Grantee's property and their respective heirs, successors, and assigns including the maintenance requirements as set forth hereinabove.
- 9. The within Easement shall not be amended except in writing signed by all parties hereto or their respective heirs and assigns.

1			
orth:			
Гће			
nel			
ıct,			
or			
ту,			
in			
he			
ce			
nat			
or			
he			
or			
īll			
ne			
if			
's			
d			
et			
ir			

PROJECT: Little Miami River, Anderson Township Park

Streambank Erosion Stabilization Project

TRACT NO.: Hamilton Co., Ohio

#### WAIVER

hereinafter referred to as "landowner", hereby state that landowner has been approached by a representative of the Anderson Township Park District, hereinafter referred to as "sponsor", who has informed landowner of the sponsor's intent to obtain a Channel Improvement Easement (whether one or more) across certain property owned by landowner.

- 1. Landowner hereby acknowledges that the representative has explained the legal boundaries of said easement as they are set forth in the Exhibit(s) attached to this document.
- 2. The representative of the sponsor has further advised the landowner of his rights under Public Law 91-646, as amended, as follows:
- a. That landowner has the right to demand a written appraisal be made of the value of the easement sought to be acquired by the sponsor and that landowner is entitled to receive no less than the fair market value as established by the appraisal;
- b. That landowner has the right to accompany the appraiser who prepares such appraisal when he inspects the land;
- c. That landowner has the right to a Written Purchase Offer stating the amount of money, which the sponsor is offering to pay for the easement;
- d. That landowner has the right to a written statement of the basis of "just compensation" which explains in detail the basis of the amount offered by said sponsor for the easement;

,		

- e. That landowner has the right to negotiate with the sponsor for the acquisition of said easement, and if the landowner cannot agree with the sponsor on the acquisition of the easement, landowner has the right to refuse to convey the easement to the sponsor and the sponsor must institute judicial proceedings to acquire the easement.
- 3. Landowner hereby acknowledges that the rights stated above have been explained in detail by the representative of the sponsor and that landowner hereby waives those rights and agrees to donate to the sponsor an easement which boundaries are described in the Exhibit(s) attached to this document.

easement which boundaries are described in the Ext	nibit(s)
attached to this document.	
IN WITNESS WHEREOF, landowner and sponsor, by duly authorized representatives have caused this dto be executed this day of	locument
WITNESS:	•
, LANDOWNER	· · · .
, LANDOWNER	
ANDERSON TOWNSHIP PARK DISTRICT, SPONSOR BY:	
ITS:	

Peck, Shaffer & Williams LLP Attorneys St Law

SUITE 900 201 EAST FIFTH STREET GINGINNATI, OHIO 45202 TELEPHONE 513-621-3394 800-927-2663 FAX 513-621-3813 WWW.PECK-BHAFFER.COM

February 13, 2004

Mr. Troy Euton Anderson Township Park District 8249 Clough Pike Cincinnati, Ohio 45244

Dear Troy:

I have reviewed the draft Project Cooperation Agreement drafted by the Army Corps of Engineers regarding the Little Miami Streambank Erosion Stabilization Project. I have the following comments concerning it.

- 1. As is typical with Federal contracts, this contract is "subject to appropriation." (Art.H.B.) If Congress were to fail to appropriate money to the Corps for these projects, the Corps would be released from its obligations under this contract and the Park District would have no remedy.
- 2. Note that the project would be Corps' project, not the Park District's. (Art.II.B.1.) You would not have control of the construction.
- 3. Your contribution requirements are set out in Art.II.E. As you progress with numbers of the project, you should review them against this section.
- 4. You have to provide the right of way (Art.II.E.2 and Art.III). You have advised that there is a piece of land involved which is not owned by the Park District. At present this is an unknown cost, and you need to have a handle on that
- 5. Note that, in general, you can't use Federal funds to provide your local share of Project costs (Art.II.H.)
- 6. The contract provides for a Project Coordination Team (Art.V), which provides you with some input but no control.
- 7. The contract sets out options for payment methods (Art.VI). You have advised that you are still evaluating that, but that you are inclined toward a lump sum payment. This Article of the contract will have to be revised when the payment method is finalized.
- 8. Article VII, Dispute Resolution, is pretty weak. All it says is that the Corps <u>might</u> agree to some form of <u>non-binding</u> alternative dispute resolution. In this form, I'm not sure it's worth having it in the document.

TLANTA, BECRUIA CHICAGO, ILLINGIS COLUMBUS, OHIO COVINGTON, KENTUCKY LOUISVILLE, KENTUCKY

Peck, Shaffer & Williams LL

Page Two

- 9. Article VIII places any operating, maintenance and repair costs on you. You have advised that you are discussing that with the Corps.
- 10. Article IX deals with indemnification. In Ohio, political subdivisions have only very limited power to indemnify other parties. The later provisions of this contract (specifically Article XX) appear to recognize that limitation, so I think we will be able to live with this provision.

As we discussed, you and the Park District staff need to continue to go through the contract closely to be sure that, administratively and operationally, you can live with the provisions of this contract.

Very truly yours,

PECK, SHAFFER & WILLIAMS LLP

By

Thomas A. Luebbers

TAL/npf

## ANDERSON PARK DISTRICT RIVERSIDE PARK RIVERBANK HISTORY

6-23-04

- In 1992 Anderson Township bought the current Riverside Park parcel and deeded it to The Anderson Park District (APD) for the development of a bicentennial park.
- The Little Miami River, a designated Wild and Scenic River, borders the park on the north and has been aggressively migrating into the park.
- In 1992, The Township Trustees attempted to stabilize the bank utilizing the Palmiter method (cabling large trees along the bank) prior to deeding the property to the Park District. This attempt was unsuccessful.
- Through the mid 1990's the bank begins to fail at an accelerated rate, causing the loss of approximately one acre of real estate, discharging over 100,000 cubic yards of soil into the river causing water quality degradation.
- Various archaeological investigations reveal a Native American village site on the
  park property at the river's edge. It is determined this village site is being
  destroyed by the bank failure and the artifacts are washing into the river.
- The Park District seeks assistance from various governmental agencies to stabilize
  the bank, preserve the artifacts, and prevent further water quality degradation and
  land loss. The U.S. Army Corps of Engineers indicate they have a program that
  can help.
- In 1998, the APD teams with The Corps to formulate a solution under The Corps Section 14 Continued Authorities program as established under the 1946 Flood Control Act. This process began early in 1999.
- In 2000, The Corps begins extensive study to develop a stream bank stabilization plan that will preserve, undisturbed, the cultural resources contained within the village site.
- In 2001, The Corps estimates the project to be \$700,000.
- In 2001, APD sells bonds to raise \$270,000 for the project (35% of the Corps estimate of \$700,000).
- In 2002 and 2003 continued plan development results in a project estimate increase of \$450,000, for a total of \$1,150,000. Section 14 provides for 65% federal monies to be combined with the Park District's 35% to execute the project.
- In the spring of 2003, The Corps hosts a design workshop with expert David
  Derrick of the Corps to facilitate a design for the riverbank. NPS, ODNR, OEPA,
  APD and members of the Corps are invited to attend. All agencies participate
  except NPS. Subsequent phone conversations and conference calls bring all
  agencies on board with the plan.
- Spring 2004, based on current estimates the Park Districts 35% of the project is \$402,500. Thus the District has a \$132,500 shortfall to fund the project. The Anderson Township Trustees agree to provide the \$132,500 shortfall so the project can proceed.
- The Corps is on schedule for construction in the fall of 2004. The District needs to pay its' 35% contribution to the Corps in July of 2004.

- On June3rd, 2004, a Section 7 plan review meeting with The National Park Service (NPS), Ohio Department of Natural Resources (ODNR), The U.S. Army Corps of Engineers and APD resulted in significant plan revision requirements. Although ODNR participated in the design, and NPS was consulted during the design process, both agencies now feel the design is too costly and contrary to The Wild and Scenic Rivers Act. Specifically, they disagree with the use of Bendway weirs on the project. Based on these comments the Corps is continuing further preliminary research and planning efforts to make plan modifications acceptable to both agencies. The Corps is hesitant to spend more design money without some written guidelines or agreements from NPS and ODNR as there is inconsistency in their representative's opinions. NPS indicated they would evaluate mitigating the cultural resources (the entire site) and develop a preferred plan utilizing their staff. Sue Jennings of NPS indicated they would have their work conceptually complete within four to six weeks.
- The Corps has requested NPS provide them with some definitive guidelines for projects on Wild and Scenic Rivers, as there is inconsistency in design information and compliance with the Act when compared to other projects they (NPS) have permitted in this section of The Little Miami River.



Little Miami River
Bank Protection
Anderson Park District Riverside Park
Hamilton County, Ohio

NOT FOR CONSTRUCTION

DECEMBER 2004

## Project Table of Contents

## Division 02 - Site Work

02220L – Demolition
02230 – Clearing
02270 – Stone Protection
02300 – Earthwork
02370A – Geotextile and Geosynthetic
02821A – Fencing
02921A – Seeding
02930 – Live Siltation and Brushlayering

SECTION 02220L

DEMOLITION 11/03

PART 1 GENERAL

#### 1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI A10.6

(1990; R 1998) Safety Requirements for Demolition Operations

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

40 CFR 61-SUBPART M

National Emission Standard for Asbestos

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1

(1996) Safety and Health Requirements Manual

#### 1.2 GENERAL REQUIREMENTS

Do not begin demolition until authorization is received from the Contracting Officer. Remove rubbish and debris from the project site; do not allow accumulations rubbish or debris within the project site. In the interest of occupational safety and health, the work shall be performed in accordance with EM 385-1-1, Section 23, Demolition, and other applicable Sections.

#### 1.3 Measurement and Payment

No seperate payment will be made for the work covered under this section and all costs in connection herewith shall be included in the applicable contract price for the item to which the work pertains.

#### 1.4 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only or as otherwise designated. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330L SUBMITTAL PROCEDURES:

SD-07 Certificates

Demolition plan; G, RO

Notifications; G, RO

LTMIARIV

SD-11 Closeout Submittals

Receipts

Receipts or bills of laden, as specified.

## 1.5 REGULATORY AND SAFETY REQUIREMENTS

Comply with federal, state, and local hauling and disposal regulations. In addition to the requirements of the "Contract Clauses," safety requirements shall conform with ANSI A10.6.

#### 1.5.1 Notifications

## 1.5.1.1 General Requirements

Furnish timely notification of demolition projects to Federal, State, regional, and local authorities in accordance with 40 CFR 61-SUBPART M. Notify the Regional Office of the United States Environmental Protection Agency (USEPA) State's environmental protection agency local air pollution control district/agency and the Contracting Officer in writing 10 working days prior to the commencement of work in accordance with 40 CFR 61-SUBPART M.

#### 1.5.2 Not Used

#### 1.6 DUST AND DEBRIS CONTROL

Prevent the spread of dust and debris and avoid the creation of a nuisance or hazard in the surrounding area. Do not use water if it results in hazardous or objectionable conditions such as, but not limited to, ice, flooding, or pollution.

#### 1.7 PROTECTION

#### - 1.7.1 Traffic Control Signs

Where pedestrian and driver safety is endangered in the area of removal work, use traffic barricades with flashing lights. Notify the Contracting Officer prior to beginning such work.

#### 1.7.2 Existing Work

Before beginning any demolition work, the Contractor shall survey the site and examine the drawings and specifications to determine the extent of the work. The Contractor shall take necessary precautions to avoid damage to existing items to remain in place, to be reused, or to remain the property of the Government; any damaged items shall be repaired or replaced as approved by the Contracting Officer. The Contractor shall coordinate the work of this section with all other work and shall construct and maintain shoring, bracing, and supports as required.

#### 1.7.3 Not Used

#### 1.7.4 Trees

Trees within the project site which might be damaged during demolition, and which are indicated to be left in place, shall be protected by a 6 foot high fence. The fence shall be securely erected a minimum of 5 feet from

LTMIARIV

the trunk of individual trees or follow the outer perimeter of branches or clumps of trees. Any tree designated to remain that is damaged during the work under this contract shall be replaced in kind or as approved by the Contracting Officer.

- 1.7.5 Not Used
- 1.7.6 Protection of Personnel

During the demolition work the Contractor shall continuously evaluate the condition of the structure being demolished and take immediate action to protect all personnel working in and around the demolition site. No area, section, or component of floors, roofs, walls, columns, pilasters, or other structural element will be allowed to be left standing without sufficient bracing, shoring, or lateral support to prevent collapse or failure while workmen remove debris or perform other work in the immediate area.

#### 1.8 BURNING

The use of burning at the project site for the disposal of refuse and debris will not be permitted.

- 1.9 NOT USED
- 1.10 NOT USED
- 1.11 REQUIRED DATA

Demolition plan shall include procedures for coordination with other work in progress, a disconnection schedule of utility services, a detailed description of methods and equipment to be used for each operation and of the sequence of operations. The procedures shall provide for safe conduct of the work in accordance with EM 385-1-1.

#### 1.12 ENVIRONMENTAL PROTECTION

The work shall comply with the requirements of Section 01410 ENVIRONMENTAL PROTECTION.

#### 1.13 USE OF EXPLOSIVES

Use of explosives will not be permitted.

PART 2 PRODUCTS

NOT USED.

PART 3 EXECUTION

- 3.1 EXISTING FACILITIES TO BE REMOVED
- 3.1.1 Structures

Existing structure indicated shall be removed to allow the placement of a minimum of six inches of topsoil to match existing adjacent grade. Floor slabs, foundations, and pavements shall be removed completely.

#### 3.1.2 Utilities and Related Equipment

Remove existing utilities uncovered by work and terminate in a manner conforming to the nationally recognized code covering the specific utility and approved by the Contracting Officer. When utility lines are encountered that are not indicated on the drawings, the Contracting Officer shall be notified prior to further work in that area. Remove meters and related equipment and deliver to a location in accordance with instructions of the Contracting Officer. If utility lines are encountered that are not shown on drawings, contact the Contracting Officer for further instructions.

#### 3.1.3 Paving and Slabs

Remove concrete and asphaltic concrete paving and slabs including aggregate base to a depth of six inches below new finish grade.

- 3.1.4 Not Used
- 3.1.5 Not Used
- 3.1.6 Not Used
- 3.1.7 Not Used
- 3.1.8 Not Used
- 3.1.9 Not Used
- 3.1.10 Not Used
- 3.1.11 Not Used
- 3.2 FILLING

Holes, open basements and other hazardous openings shall be filled in accordance with Section 02300 EARTHWORK.

#### 3.3 DISPOSITION OF MATERIAL

#### 3.3.1 Title to Materials

Except where specified in other sections, all materials and equipment removed, and not reused, shall become the property of the Contractor and shall be removed from Government property. Title to materials resulting from demolition, and materials and equipment to be removed, is vested in the Contractor upon approval by the Contracting Officer of the Contractor's demolition and removal procedures, and authorization by the Contracting Officer to begin demolition. The Government will not be responsible for the condition or loss of, or damage to, such property after contract award. Materials and equipment shall not be viewed by prospective purchasers or sold on the site.

#### 3.3.2 Unsalvageable Material

Concrete, masonry, and other noncombustible material, except concrete permitted to remain in place, shall be disposed off the site. Combustible material shall be disposed of off the site.

LTMIARIV

#### 3.4 CLEANUP

Debris and rubbish shall be promptly removed from the project site. Debris shall be removed and transported in a manner that prevents spillage on streets or adjacent areas. Local regulations regarding hauling and disposal shall apply. Disposal shall be in a state certified landfill and with all costs at the Contractor's expense, except when otherwise directed in writing.

- 3.5 Not Used
- 3.6 Not Used
- 3.7 Not Used
- 3.8 Not Used
- 3.9 Not Used
- 3.10 Not Used
- 3.11 Not Used
  - -- End of Section --

SECTION 02230

CLEARING 06/97

PART 1 GENERAL

#### 1.1 DEFINITIONS

#### 1.1.1 Clearing

Clearing shall consist of the felling, trimming, and cutting of tress and bushes into sections and the satisfactory disposal of the trees and other vegetation and designated for removal, including snags, brush, debris, drift wood, and rubbish occurring in the areas to be cleared. Clearing shall be limited to slopes that are to receive longitudinal fill stone and soil fill. No clearing shall occur at the top of the slope.

#### 1.1.2 NOT USED

#### 1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330L SUBMITTAL PROCEDURES:

SD-03 Product Data

Materials

Name and location of State Certified Landfill to be used.

#### 1.3 MEASUREMENT AND PAYMENT

No separate payment will be made for the work covered under this section and all costs in connection herewith shall be included in the applicable contract price for the item to which the work pertains.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

#### 3.1 CLEARING

Trees, stumps, roots, brush, and other vegetation in areas to be cleared shall be cut off flush with or below the ground surface. Trees and vegetation to be left standing shall be protected from damage incident to clearing, grubbing, and construction operations by the erection of barriers or by such other means as the circumstances require. Trees, stumbs, roots, brush, and other vegetation shall be disposed of as specified in paragraph DISPOSAL OF MATERIALS.

LTMIARIV

- 3.2 NOT USED
- 3.3 NOT USED
- 3.4 DISPOSAL OF MATERIALS
- 3.4.1 Materials

Logs, stumps, roots, brush, rotten wood, and other refuse from the clearing operations, shall be disposed of in a state certified landfill and with all costs at the Contractor's expense, except when otherwise directed in writing. Such directive will state the conditions covering the disposal of such products and will also state the areas in which they may be placed.

-- End of Section --

#### SECTION 02270

## STONE PROTECTION 06/00

#### PART 1 GENERAL

#### 1.1 SUMMARY

The work covered by this section consists of performing all operations in connection with the construction of stone protection (bedding stone, fill stone and riprap) as shown on the drawings or as directed by the Contracting Officer, in accordance with these specifications and applicable drawings.

#### 1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330L SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Sources; G, CELRL-ED-T-G.

Source(s) from which the Contractor proposes to obtain the bedding stone, fill stone and riprap shall be submitted to the Contracting Officer.

SD-06 Test Reports

Gradation Testing; G, CELRL-ED-T-G.

Certified copies of current gradation tests for the riprap (ODOT Type C Riprap), bedding stone (OH #1's or 2's) and the fill stone (OH #9's) shall be submitted to the Contracting Officer.

#### 1.3 MEASUREMENT AND PAYMENT

The Longitudinal Fill Stone Toe Protection, Bendway Weirs and Gravel Filter shall be measured in tons and paid for at the contract unit price for "Longitudinal Fill Stone Toe Protection", "Bendway Weir" and "Gravel Filter" and this price shall constitute full compensation for all labor, equipment, tools, and incidentals necessary to complete the work specified herein.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION

#### 3.1 SITE PREPARATION

All areas where Longitudinal Fill Stone Toe Protection and Gravel Filter is required shall be cleared in accordance with section 02230, "CLEARING". Immediately prior to placing any of the materials, the prepared base shall

LTMIARIV

be inspected by the Contracting Officer and no material shall be placed thereon until that area has been approved.

#### 3.2 LONGITUDINAL FILL STONE TOE PROTECTION AND BENDWAY WEIRS

#### 3.2.1 General

#### 3.2.1.1 Approval

All longitudinal fill stone and bendway weirs shall be durable stone as approved by the Contracting Officer. Within 5 days after receipt of Notice to Proceed, the Contractor shall identify to the Contracting Officer the sources from which the Contractor proposes to obtain the longitudinal fill stone and bendway weir for the work. The Contracting Officer will indicate to the Contractor, within 15 days of receipt of the identified sources, approval or disapproval of the proposed sources.

#### 3.2.1.2 Limits of Placement

Longitudinal fill stone protection and bendway weirs shall be placed within the limits shown on the plans or as otherwise required by the Contracting Officer.

#### 3.2.2 Gradation

Longitudinal fill stone and bendway weirs shall be graded per Section 601.07 of the State of Ohio, Department of Transportation (ODOT) 2002 Standard Specifications The minimum thickness of the Type C stone shall be 18-inches.

#### 3.2.3 Quality of Longitudinal Fill Stone and Bendway Weir

Acceptance of a proposed source will be based on laboratory test results, service history and the recommendations of the Contracting Officer's representatives. The Government reserves the right to reject stone when, in the opinion of the Contracting Officer, the material has disintegrated, weathered badly, changed lithologinal characteristics from what was tested, or is otherwise unsatisfactory for the intended use, and require the Contractor to replace the material at no cost to the Government.

Quantitative, index, and qualitative testing shall be required to determine the potential durability of the stone to be utilized on the project. Testing will be performed by the Contractor, using a qualified laboratory, once potential quarry suppliers are determined. Upon meeting the following criteria, the supplier will be qualified to produce the material needed for this project.

Field investigations and collection of the representative test specimens shall be coordinated with and witnessed by a Corps of Engineers, Louisville District geologist. The ODOT Type C stone protection sample shall be representative of all ledges from which the quarry proposes to produce. Enough samples shall be taken to adequately perform all required testing.

Petrographic examination of samples, which adequately represent each different lithological type to be used, shall be conducted according to ASTM D-4992. Analysis shall be conducted by a qualified geologist or petrographer. Acceptable samples should not contain unacceptable amounts of deleterious minerals or structures, including shale, clay, claystone, ironstone, weak bedding planes, thick carbonaceous stylolitic seams, and

LTMIARIV

massive, continuous beds of chalcedonous chert. Any stone which contains a plane of weakness which is continuous and observable along the entire circumference will be rejected.

For each lithological type which has petrographic analysis performed, representative samples shall be taken for specific gravity and absorption testing. The samples selection shall be witnessed by Corps of Engineers, Louisville District geologist and tested by qualified laboratory. The specific gravity of the material shall be a minimum of 2.50 with a maximum absorption of 3.0%.

Stone Protection materials shall be approximately equal in cross-section and be relatively free from thin slabby pieces having a flat or elongation ratio greater than three. In no case shall the quantity of stone protection stones having flat or elongation ratio greater than three exceed five (5) percent by weight of any one load or area. Note: For these specifications the following definition shall apply: Flat Stone: Stone with a ratio of width to thickness greater than 3. Elongation Stone: Stone with a ratio of length to width greater than 3.

#### 3.2.4 Placement

Longitudinal fill stone toe protection and bendway weirs shall be placed in such a manner as to produce a reasonably well graded mass of rock with the minimum practicable percentage of voids, and shall be constructed to the lines and grades shown on the drawings or staked in the field. The longitudinal fill stone must be placed starting at the toe of the slope. Longitudinal fill stone shall be placed to its full course thickness in one operation. This shall be done to prevent destabilizing the slope. The larger stone shall be well distributed and the entire mass of stones in their position shall be roughly graded to conform to the gradation specified in paragraph: 3.2.2. The finished longitudinal fill stone and bendway weirs shall be free from objectional pockets of small stones and clusters of larger stones. Placing some of the designated size in layers will not be permitted. The desired distribution of the various sizes of stones throughout the mass shall be obtained by selective loading of the material at the quarry or other source; by controlled dumping of successive loads during the final placing; or by other methods of placement which will produce the specified results. Rearranging of individual stones by mechanical equipment or by hand will be required to the extent necessary to obtain a reasonably well graded distribution of stone sizes as specified above. Tracked equipment will not be permitted on the riprap surface. The Contractor shall maintain the stone protection until accepted and any material displaced by any cause shall be replaced at this expense to the lines and grades shown on the drawings.

#### 3.3 GRAVEL FILTER

#### 3.3.1 General

#### 3.3.1.1 Approval

All gravel filter shall be durable stone as approved by the Contracting Officer. Within 5 days after receipt of Notice to Proceed, the Contractor shall identify to the Contracting Officer the sources from which the Contractor proposes to obtain the material for the work. The Contracting Officer will indicate to the Contractor, within 15 days of receipt of the identified sources, approval or disapproval of the proposed sources.

#### 3.3.1.2 Limits of Placement

Gravel filter stone shall be placed within the limits shown on the plans or as otherwise required by the Contracting Officer.

#### 3.3.2 Gradation

The gradation of the gravel filter (OH # 57's) shall be in accordance with Section 703.01 the 2002 ODOT Standard Specifications.

OH #57	
% Passing	Screen Size
100	1.5 in
95-100	1.0 in
25-60	0.5 in
0-10	No. 4
0-5	No. 8

Minimum Thickness 6-inches

#### 3.3.3 Placement

Gravel filter stone shall be spread uniformly on the prepared base, in a satisfactory manner, to the slope lines and grades indicated on the drawings. Placing of material by methods which will tend to segregate particle sizes within the gravel filter will not be permitted. Tracked equipment will not be permitted on the gravel filter surface. Any damage to the surface of the base during placing of the gravel filter material shall be repaired before proceeding with the work. Compaction of the gravel filter layer will not be required, but it shall be finished to present a reasonably even surface free from mounds or windrows before placement of the longitudinal fill stone.

#### - 3.4 NATIVE COBBLESTONE

#### 3.4.1 General

#### 3.4.1.1 Approval

The native cobblestone shall be durable stone as approved by the Contracting Officer. Within 5 days after receipt of Notice to Proceed, the Contractor shall identify to the Contracting Officer the sources from which the Contractor proposes to obtain the material for the work. The Contracting Officer will indicate to the Contractor, within 15 days of receipt of the identified sources, approval or disapproval of the proposed sources.

#### 3.4.1.2 Limits of Placement

The native cobblestone shall be placed within the limits shown on the plans or as otherwise required by the Contracting Officer. The minimum thickness shall be 6 inches.

LTMIARIV

#### 3.4.2 Not Used

#### 3.4.3 Placement

The native cobblestoneshall be spread uniformly on the prepared base, in a satisfactory manner, to the slope lines and grades indicated on the drawings. Placing of material by methods which will tend to segregate particle sizes within the native cobblestone layer will not be permitted. Tracked equipment will not be permitted on the native cobblestone surface. Any damage to the surface of the base during placing of the native cobble stone shall be repaired before proceeding with the work. Compaction of the native cobblestones will not be required.

#### 3.5 TESTING PROGRAM

The Contractor shall perform gradation tests for the longitudinal fill stone, bendway weirs, gravel filter, and native cobblestone utilizing the procedures described in the Test Method as prepared by the Louisville District for dumped samples bound at the end of this section of specifications. Testing shall be performed once at the source of stone prior to delivery to the site. Additional tests may be required to demonstrate compliance with the contract. The Contracting Officer may select the time and location of the required tests.

#### 3.6 NOT USED

#### LOUISVILLE DISTRICT TEST METHODS

#### STONE GRADATION TESTS

GENERAL.

The following test methods shall be used to determine the gradation of any stone product when the maximum size stone specified for that material exceeds 1.2 in. The methods herein cover both in-place and dumped sampling.

#### 1. In-Place Method.

The in-place method is used to test the material placed as a final end product. In this method a location is selected on the surface of the lift, layer, or coarse and a surface area the size of which is determined by the maximum size stone specified, (see para 3) is clearly marked delineating the test area. All stone within this area and for the full depth of the layer, course or lift shall be removed and the gradation of the stone within the area is measured and/or weighed to determine the in-place gradation. Care must be taken to insure that all material being tested is removed form the area and material outside of or below the area is not incorporated in the sample.

#### 2. Dumped Sample.

The dumped sampling method consists of selecting a random load prior to the placing operation. Care should be taken to prevent contamination of the sample or loss of material by dumping the sample on a tarp or plywood. The minimum size of this sample shall be determined by the maximum size stone specified for this material. These size - quantity requirements are shown in para 3. This sample should reflect all production, processing and

LTMIARIV

loading methods in effect at that time to produce the material for the final specified product.

3. Sample Size.

Approximate Sample Quantity

Maximum Size Stone	Dumped	In-Place
10 in. or less	8-10 tons	6x6 ft
10-16 in.	10-12 tons	10x10 ft

4. Recording Test.

The results of this test will be recorded and calculated in the form presented below.

STONE GRADATION TEST

Material:

Total Weight of Sample:

Location (in-place):

RIPRAP

Type C Riprap per Section 601.07 of the State of Ohio, Department of Transportation (ODOT) 1997 Standard Specifications.

ENG Forms 4055 and 4056 or similar will be used to plot resultant curves.

- 5. The Contractor shall provide the following equipment:
  - (1) Portable platform scale (+200 lb capacity)
  - (1) Tarps or plywood
- (1) Set rigid steel squares. Welded rod sufficiently rigid to hold required dimensions.
- 6. An initial gradation test for approval shall be performed from a stockpile at the stone source by the Contractor at the direction of the Contracting Officer.
  - -- End of Section --

SECTION 02300

EARTHWORK 12/97

PART 1 GENERAL

#### 1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

ASTM INTERNATIONAL (ASTM)

ASTM D 2487

(1998) Classification of Soils for Engineering Purposes (Unified Soil Classification System)

#### 1.2 MEASURMENT AND PAYMENT

No seperate payment will be made for the work covered under this section and all costs in connection herewith shall be included in the applicable contract price for the item to which the work pertains.

#### 1.3 DEFINITIONS

#### 1.3.1 Satisfactory Materials

Satisfactory materials to be used for soil fills are comprised of materials classified by ASTM D 2487 as CL. Satisfactory materials for grading shall be comprised of stones less than 3 inches in any dimension.

#### 1.3.2 Unsatisfactory Materials

Materials which do not comply with the requirements for satisfactory materials are unsatisfactory. Unsatisfactory materials also include man-made fills; trash; refuse; backfills from previous construction; and material classified as satisfactory which contains root and other organic matter or frozen material. The Contracting Officer shall be notified of any contaminated materials.

#### 1.3.3 NOT USED

#### 1.3.4 Satisfactory Compaction

Satisfactory compaction shall be in accordance with paragraphs 3.12 and 3.13.

- 1.3.5 NOT USED.
- 1.3.6 TOPSOIL

Material suitable for topsoils shall be obtained by the contractor and shall conform to ODOT 653.02.

SECTION 02300 Page 1

LTMIARIV

#### 1.4 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330L SUBMITTAL PROCEDURES:

SD-03 Product Data

Earthwork; G, RO

Procedure and location for disposal of unused satisfactory material and disposal of unsatisfactory material.

SD-06 Test Reports

Testing

Within 24 hours of conclusion of physical tests, 4 copies of test results, including calibration curves and results of calibration tests.

SD-07 Certificates

Testing; G, RO

Qualifications of the commercial testing laboratory or Contractor's testing facilities.

- 1.5 NOT USED.
- 1.6 CLASSIFICATION OF EXCAVATION

No excavation is planned for this project.

1.7 BLASTING

Blasting will not be permitted.

1.8 DISPOSAL OF UNSATISFACTORY MATERIALS

Unsatisfactory materials removed from the project site shall be disposed of in a state approved landfill.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 STRIPPING OF TOPSOIL

No topsoil shall be stripped or excavated for this project.

3.2 GENERAL EXCAVATION .

No excavation is planned as part of this project.

SECTION 02300 Page 2

LTMIARIV

- 3.2.1 Not Used
- 3.2.2 Not Used
- 3.3 NOT USED
- 3.4 NOT USED.
- 3.5 NOT USED
- 3.6 NOT USED
- 3.7 NOT USED
- 3.7.1 NOT USED
- 3.7.2 FROZEN MATERIAL

Fill shall not be placed on a foundation which contains frozen material, or which has been subjected to freeze-thaw action. This prohibition encompasses all foundation types, including the natural ground, all prepared subgrades (in an excavation) and all layers of previously placed and compacted earth fill which become the foundations for successive layers of earth fill. All material that freezes or has been subjected to freeze-thaw action during the construction work, or during periods of temporary shutdowns, such as, but not limited to, nights, holidays, weekends, winter shutdowns, or earthwork operations, shall be removed to a depth that is acceptable to the Contracting Officer and replaced with new material. Alternatively, the material will be thawed, dried, reworked, and recompacted to the specified criteria before additional material is placed. The Contracting Officer will determine when placement of fill shall cease due to cold weather. The Contracting Officer may elect to use average daily air temperatures, and/or physical observation of the soils for his determination. Fill material shall not contain frozen clumps of soil, snow, or ice.

- 3.8 FILLS
- 3.8.1 Soil Fill

Soil fill shall be placed within the limits as shown on the plans or as directed by the Contracting Officer.

- 3.8.2 NOT USED.
- 3.9 SUBGRADE PREPARATION

Subgrade shall be prepared by removal of woody debris from the slopes.

- 3.10 NOT USED.
- 3.11 FINISHING

The degree of finish for graded areas shall be within 0.1 foot of the grades and elevations indicated on the plans. The surface of areas to be seeded shall be finished to a smoothness suitable for the application of seeding materials.

SECTION 02300 Page 3

#### 3.12 PLACING TOPSOIL

On areas to receive topsoil, the compacted subgrade soil shall be scarified to a 2 inch depth for bonding of topsoil with subsoil. Topsoil then shall be spread evenly to a thickness of 6 inches and graded to the elevations and slopes shown. Topsoil shall not be spread when frozen or excessively wet or dry.

#### 3.13 COMPACTION OF THE SOIL FILL

Compaction shall consist of 6 inch lifts of satisfactory material and 2 passes with a 10 ton vibratory roller where possible. Testing of these materials shall not be required.

#### 3.14 NOT USED

-- End of Section --

#### SECTION 02370A

#### GEOTEXTILE AND GEOSYNTHETIC

#### 01/03

#### PART 1 GENERAL

#### 1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

#### ASTM INTERNATIONAL (ASTM)

ASTM D 1248	(2002) Polyethylene Plastics Extrusion Materials for Wire and Cable
ASTM D 1560	(1992; R 2000) Resistance to Deformation and Cohesion of Bituminous Mixtures by Means of Hveem Apparatus
ASTM D 1777	(1996; R 2002) Thickness of Textile Materials
ASTM D 2844	(2001) Resistance R-Value and Expansion Pressure of Compacted Soils
ASTM D 4355	(2002) Deterioration of Geotextiles from Exposure to Light, Moisture and Heat in a Xenon-Arc Type Apparatus
ASTM D 4751	(1999a) Determining Apparent Opening Size of a Geotextile
ASTM D 4759	(2002) Determining the Specification Conformance of Geosynthetics
ASTM D 648	(2001) Deflection Temperature of Plastics Under Flexural Load in the Edgewise Position

#### 1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for Contractor Quality Control approval. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-03 Product Data

Geotextile Fabrics; G, CELRL-ED-TG

ARIV			
the			
l			
a			
e			
s			
ol			
ral.			

Synthetic Material; G, CELRL-ED-TG

Manufacturer's literature including physical characteristics, application and installation instructions.

Equipment; G

A listing of equipment to be used for the application of geotextiles and geosynthetics.

Finished Grade; G

Condition of finish grade status prior to installation; location of underground utilities and facilities.

SD-04 Samples

Materials; G

- a. Geosynthetic material; 1 sample grid.
- d. Geotextile fabrics; 6 inch square.

SD-06 Test Reports

Geosynthetic Material; G, CELRL-ED-TG

Geotextile Fabrics; G, CELRL-ED-TG

Certified reports of inspections and laboratory tests, prepared by an independent testing agency, including analysis and interpretation of test results. Each report shall be properly identified. Test methods used and compliance with recognized test standards shall be described.

SD-07 Certificates

Geosynthetic Material; G Geotextile Fabrics; G

Prior to delivery of materials, certificates of compliance attesting that materials meet the specified requirements. Certified copies of the material certificates shall include the following.

For items listed in this section:

- a. Certification of recycled content or,
- b. Statement of recycled content.
- c. Certification of origin including the name, address and telephone number of manufacturer.

LTMIARIV

Construction Work Sequence Schedule; G, CELRL-ED-TG

Construction sequence schedule.

Installer's Qualification; G, CELRL-ED-TG

The installer's company name and address; training and experience and or certification.

SD-10 Operation and Maintenance Data

Maintenance Instructions; G, CELRL-ED-TG

Instruction for year-round care of installed material. The Contractor shall include manufacturer supplied spare parts.

#### 1.3 MEASUREMENT AND PAYMENT

No seperate payment will be made for the work covered under this section and all costs in connection herewith shall be included in the applicable contract price for the item to which the work pertains.

#### 1.4 DESCRIPTION OF WORK

The work shall consist of furnishing and installing geotextile fabric and geosynthetic materials, including fine grading, blanketing, stapling, mulching and miscellaneous related work, within project limits and in areas outside the project limits where the soil surface is disturbed from work under this contract at the designated locations. This work shall include all necessary materials, labor, supervision and equipment for installation of a complete system. This section shall be coordinated with the requirements of Section 02300 EARTHWORK and Section 02921A SEEDING.

# - 1.5 DELIVERY, INSPECTION, STORAGE, AND HANDLING

Materials shall be stored in designated areas and as recommended by the manufacturer protected from the elements, direct exposure, and damage. Containers shall not be dropped from trucks. Material shall be free of defects that would void required performance or warranty. Geosynthetic binders and synthetic soil binders shall be delivered in the manufacturer's original sealed containers and stored in a secure area.

a. Geosynthetic material and geotextile fabric shall be furnished in rolls with suitable wrapping to protect against moisture and extended ultraviolet exposure prior to placement. Geosynthetic material and geotextile fabric rolls shall be labeled to provide identification sufficient for inventory and quality control purposes.

#### 1.6 SUBSTITUTIONS

Substitutions will not be allowed without written request and approval from the Contracting Officer.

#### 1.7 INSTALLER'S QUALIFICATION

The installer shall be certified by the manufacturer for training and

LTMIARIV

experience installing the material.

#### 1.8 NOT USED

#### 1.9 WARRANTY

Geotextile fabric and geosynthetic material shall have a warranty for use and durable condition for project specific installations.

#### PART 2 PRODUCTS

#### 2.1 RECYCLED PLASTIC

Recycled plastic shall contain a minimum 85 percent of recycled post-consumer product. Recycled material shall be constructed or manufactured with a maximum 1/4 inch deflection or creep in any member, according to ASTM D 648 and ASTM D 1248. The components shall be molded of ultraviolet (UV) and color stabilized polyethylene. The material shall consist of a minimum 75 percent plastic profile of high-density polyethylene, low-density polyethylene, and polypropylene raw material. The material shall be non-toxic and have no discernible contaminates such as paper, foil, or wood. The material shall contain a maximum 3 percent air voids and shall be free of splinters, chips, peels, buckling, and cracks. Material shall be resistant to deformation from solar heat gain.

#### 2.2 BINDERS

#### 2.2.1 Synthetic Soil Binders

Calcium chloride, or other standard manufacturer's spray on adhesives designed for dust suppression.

# 2.2.2 Geosynthetic Binders

Geosynthetic binders shall be manufactured in accordance with ASTM D 1560, ASTM D 2844; and shall be referred to as products manufactured for use as modified emulsions for the purpose of erosion control and soil stabilization. Emulsions shall be manufactured from all natural materials and provide a hard durable finish.

# 2.3 MULCH

Mulch shall be free from weeds, mold, and other deleterious materials. Mulch materials shall be native to the region.

#### 2.3.1 Straw

Straw shall be stalks from oats, wheat, rye, barley, or rice, furnished in air-dry condition and with a consistency for placing with commercial mulch-blowing equipment.

# 2.3.2 Hay

Hay shall be native hay, sudan-grass hay, broomsedge hay, or other herbaceous mowings, furnished in an air-dry condition suitable for placing with commercial mulch-blowing equipment.

LTMIARIV

#### 2.3.3 Wood Cellulose Fiber

Wood cellulose fiber shall not contain any growth or germination-inhibiting factors and shall be dyed an appropriate color to facilitate placement during application. Composition on air-dry weight basis: a minimum 9 to a maximum 15 percent moisture, and between a minimum 4.5 to a maximum 6.0 pH.

#### 2.3.4 Paper Fiber

Paper fiber mulch shall be recycled news print that is shredded for the purpose of mulching seed.

#### 2.3.5 Shredded Bark

Locally shredded material shall be treated to retard the growth of mold and fungi.

## 2.3.6 Wood By-Products

Wood locally chipped or ground bark shall be treated to retard the growth of mold and fungi. Gradation: A maximum 2 inch wide by 4 inch long.

#### 2.3.7 Not Used

#### 2.4 GEOSYNTHETIC MATERIAL

Geosynthetic material shall be woven of polypropylene filaments formed into a stable network so that the filaments retain their relative position to each other. Sewn seams shall have strength equal to or greater than the geotextile itself. Fabric shall be installed to withstand maximum velocity flows as recommended by the manufacturer. The geotextile shall conform to the following minimum average roll values:

Property	Perfo	rmanc	ce	Test	Method		
True Tensile St in Use @ 2% Str		280	lb/ft		ASTM	D	4759
True Tensile St in Use @ 5% Str	_	580	lb/ft		ASTM	D	4759
Minimum Rib Thi	ckness	0.03	3 in		ASTM	D	1777
Aperture Dimens	ion	1 in	1		ASTM	D	4751
UV Resistance @	500 hrs	90 F	ercent		ASTM	D	4355

### 2.5 GEOTEXTILE FABRIC

Geotextile Fabric shall be a 270 gram/square meter nonwoven fabric with a minimum puncture property of 175 lbs and an AOS of 100 (U.S. sieve). The geotextile fabric shall be made from husk of coconut fiber.

## 2.5.1 Staking

Stakes shall be 100 percent biodegradable manufactured from recycled plastic or wood and shall be designed to safely and effectively secure erosion control blankets for temporary or permanent applications. The biodegradable stake shall be fully degradable by biological activity within

LTMIARIV

a reasonable time frame. The bio-plastic resin used in production of the biodegradable stake shall consist of polylactide, a natural, completely biodegradable substance derived from renewable agricultural resources. The biodegradable stake must exhibit ample rigidity to enable being driven into hard ground, with sufficient flexibility to resist shattering. The biodegradable stake shall have serrations on the leg to increase resistance to pull-out from the soil. The biodegradable stake shall be 2 feet long dead stout stakes.

#### 2.5.2 Staples

Staples shall be as recommended by the manufacturer.

#### 2.6 GEOSYNTHETIC MATERIAL

Synthetic grid and sheet systems shall be formed of recycled plastic in accordance with paragraph RECYCLED PLASTICS and have interlocking components to form a uniform underlayment or strata to receive fill. Geosynthetic material shall be made of interlock components. Sheets of this material shall be manufactured to allow articulation upward and downward while restricting lateral movement. The material shall articulate over three-directional vertical curves, both upward and downward. This material shall provide 100 percent coverage of the area with the cells back filled.

#### 2.7 WATER

Unless otherwise directed, water shall be the responsibility of the Contractor. Water shall be potable or supplied by an existing irrigation system.

#### PART 3 EXECUTION

#### 3.1 CONDITIONS

The Contractor shall submit a construction work sequence schedule, with the approved erosion control plan a minimum of 30 days prior to start of construction. The work schedule shall coordinate the timing of land disturbing activities with the provision of erosion control measures. Erosion control operations shall be performed under favorable weather conditions; when excessive moisture, frozen ground or other unsatisfactory conditions prevail, the work shall be stopped as directed. When special conditions warrant a variance to earthwork operations, a revised construction schedule shall be submitted for approval. Erosion control materials shall not be applied in adverse weather conditions which could affect their performance.

#### 3.1.1 Finished Grade

The Contractor shall verify that finished grades are as indicated on the drawings; finish grading and compaction shall be completed in accordance with Section 02300 EARTHWORK, prior to the commencement of the work. The location of underground utilities and facilities in the area of the work shall be verified and marked. Damage to underground utilities and facilities shall be repaired at the Contractor's expense.

# 3.1.2 Placement of Geotextile Fabric

Before placing the geotextile fabric, ensure the subgrade has been graded

LTMIARIV

smooth; has no depressed, void areas; is free from obstructions, such as tree roots, projecting stones or other foreign matter.

#### 3.1.3 Geosynthetic Material

Before placing the geosynthetic material, ensure that the subgrade has been properly grubbed of large roots and rocks; compacted; has been graded smooth; has no depressed, void, soft or uncompacted areas; is free from obstructions, such as tree roots, projecting stones or other foreign matter; and has been seeded.

#### 3.2 SITE PREPARATION

# 3.2.1 Protecting Existing Vegetation

When there are established lawns in the work area, the turf shall be covered and/or protected or replaced after construction operations. Existing trees, shrubs, and plant beds that are to be preserved shall be barricaded along the dripline. Damage to existing trees shall be mitigated by the Contractor at no additional cost to the Government. Damage shall be assessed by a state certified arborist or other approved professional using the National Arborist Association's tree valuation guideline.

#### 3.2.2 Obstructions Below Ground

When obstructions below ground affect the work, shop drawings showing proposed adjustments to placement of erosion control material shall be submitted for approval.

#### 3.3 INSTALLATION

## 3.3.1 Synthetic Binders

Synthetic binders shall be applied heaviest at edges of areas and at crests of ridges and banks to prevent displacement. Binders shall be applied to the remainder of the area evenly as recommended by the manufacturer.

# 3.3.2 Seeding

When seeding is required prior to installing mulch on synthetic grid systems the Contractor shall verify that seeding will be completed in accordance with Sections 02300 EARTHWORK and 02921A SEEDING.

#### 3.3.3 Mulch Installation

Mulch shall be applied evenly per the manufacturer's recommendation

#### 3.3.4 Mulch Control Netting

Netting may be stapled over mulch according to manufacturer's recommendations.

#### 3.3.5 Mechanical Anchor

Mechanical anchor shall be a V-type-wheel land packer; a scalloped-disk land packer designed to force mulch into the soil surface; or other suitable equipment.

·			

LTMIARIV

#### 3.3.6 Geotextile Fabric

- a. Geotextile Fabric shall be installed as indicated and in accordance with manufacturer's recommendations. The extent of erosion control blankets shall be as shown on drawings.
- b. Geotextile Fabric shall be oriented in vertical strips and anchored with staples, as indicated. Adjacent strips shall be abutted to allow for installation of a common row of staples. Horizontal joints between geotextile fabric shall be overlapped sufficiently to accommodate a common row of staples with the uphill end on top.
- c. Where exposed to overland sheet flow, a trench shall be located at the uphill termination. The geotextile fabric be stapled to the bottom of the trench. Backfill and compact the trench as required.
- d. Where terminating in a channel containing an installed blanket, the geotextile fabric shall overlap installed blanket sufficiently to accommodate a common row of staples.

#### 3.3.7 Geosynthetic Material

Geosynthetic Material shall be anchored in accordance with the manufacturer's recommendation. Geosynthetic material shall be placed on a well graded surface and then backfilled, a maximum seven days after placement, to protect the material from ultraviolet radiation. As the installation progresses, backfilling shall include contiguous perimeter termination trenches.

#### 3.3.7.1 Seeding, Fertilizing, Mulching

Seed shall be installed in accordance with Section 02921A SEEDING.

#### 3.4 CLEAN-UP

Excess material, debris, and waste materials shall be disposed offsite at an approved landfill or recycling center. Adjacent paved areas shall be cleared. Immediately upon completion of the installation in an area, the area shall be protected against traffic or other use by erecting barricades and providing signage as required, or as directed.

#### 3.5 WATERING SEED

Watering shall be started immediately after installing geotextile fabric. Water shall be applied to supplement rainfall at a sufficient rate to ensure moist soil conditions to a minimum 1 inch depth. Run-off and puddling shall be prevented. Watering trucks shall not be driven over turf areas, unless otherwise directed. Watering of other adjacent areas or plant material shall be prevented.

#### 3.6 MAINTENANCE RECORD

A record shall be furnished describing the maintenance work performed, record of measurements and findings for product failure, recommendations for repair, and products replaced.

#### 3.6.1 Maintenance

Maintenance shall include eradicating weeds; protecting embankments and ditches from surface erosion; maintaining the performance of the erosion control materials and mulch; protecting installed areas from traffic.

#### 3.6.1.1 Maintenance Instructions

Written instructions containing drawings and other necessary information shall be furnished, describing the care of the installed material; including, when and where maintenance should occur, and the procedures for material replacement.

#### 3.6.1.2 Patching and Replacement

Unless otherwise directed, material shall be placed, seamed or patched as recommended by the manufacturer. Material not meeting the required performance as a result of placement, seaming or patching shall be removed from the site. The Contractor shall replace the unacceptable material at no additional cost to the Government.

# 3.7 SATISFACTORY STAND OF GRASS PLANTS

When geotextile fabric is installed, the grass plants shall be evaluated for species and health when the grass plants are a minimum 1 inch high. A satisfactory stand of grass plants from the revegetation mat area shall be a minimum 10 grass plants per square foot. The total bare spots shall not exceed 2 percent of the total revegetation mat area.

-- End of Section --

## SECTION 02821A

FENCING 02/02

#### PART 1 GENERAL

# 1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

# ASTM INTERNATIONAL (ASTM)

ASTM A 116	(2000) Metallic-Coated, Steel Woven Wire Fence Fabric
ASTM A 121	(1999) Zinc-Coated (Galvanized) Steel Barbed Wire
ASTM A 780	(2000) Repair of Damaged and Uncoated Areas of Hot-Dipped Galvanized Coatings
ASTM A 824	(1995) Metallic-Coated Steel Marcelled Tension Wire for Use With Chain Link Fence
ASTM C 94/C 94M	(2000e2) Ready-Mixed Concrete
ASTM F 1043	(2000) Strength and Protective Coatings on Metal Industrial Chain-Link Fence Framework
ASTM F 1083	(1997) Specification for Pipe, Steel,

# AMERICAN WOOD-PRESERVERS' ASSOCIATION (AWPA)

AWPA C1	(2000) All Timber Products - Preservative
	Treatment by Pressure Processes

Hot-Dipped Zinc-Coated (Galvanized)

Welded, for Fence Structures

AWPA C4 (1999) Poles - Preservative Treatment by Pressure Processes

#### 1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330L SUBMITTAL PROCEDURES:

## SD-07 Certificates

Woven Wire Fence; G, RO

Statement, signed by an official authorized to certify on behalf

LTMIARIV

of the manufacturer, attesting that the woven wire fence and component materials meet the specified requirements.

## 1.3 MEASUREMENT AND PAYMENT

No seperate payment will be made for the work covered under this section and all costs in connection herewith shall be included in the applicable contracty price for the item to which the work pertains.

#### PART 2 PRODUCTS

#### 2.1 FENCE FABRIC

Fence fabric shall conform to the following:

#### 2.1.1 Woven Wire

Woven wire shall conform to ASTM A 116 No. 9 farm fence; grade, size as indicated.

#### 2.2 POSTS

#### 2.2.1 Wood Posts

Wood posts shall be cut from sound and solid trees free from short or reverse bends in more than one plane. Tops shall be convex rounded or inclined. Posts shall be free of ring shake, season cracks more than 1/4 inch wide, splits in the end, and unsound knots. Size and shape of posts shall be as indicated. Posts shall be treated in accordance with AWPA C1 or AWPA C4 as applicable.

#### 2.3 BRACES

ASTM F 1083, zinc-coated, Group IA, steel pipe, size NPS 1-1/4. Group IC steel pipe, zinc-coated, shall meet the strength and coating requirements of ASTM F 1043.

#### 2.4 WIRE

#### 2.4.1 Tension Wire

Tension wire shall be Type I or Type II, Class 2 coating, in accordance with ASTM A 824.

#### 2.4.2 Barbed Wire for Farm Style Fence

Barbed wire shall conform to ASTM A 121 zinc-coated, class 1, 13 gauge wire with 13-1/2 gauge 4-point barbs spaced no more than 6 inches apart.

#### 2.5 CONCRETE

ASTM C 94/C 94M, using 3/4 inch maximum size aggregate, and having minimum compressive strength of 3000 psi at 28 days. Grout shall consist of one part portland cement to three parts clean, well-graded sand and the minimum amount of water to produce a workable mix.

LTMIARIV

#### PART 3 EXECUTION

#### 3.1 INSTALLATION

Fence shall be installed to the lines and grades indicated. The area on either side of the fence line shall be cleared to the extent necessary for installation. Line posts shall be spaced equidistant at intervals not exceeding 10 feet. Terminal (corner, gate, and pull) posts shall be set at abrupt changes in vertical and horizontal alignment. Fabric shall be continuous between terminal posts; however, runs between terminal posts shall not exceed 500 feet. Any damage to galvanized surfaces, including welding, shall be repaired with paint containing zinc dust in accordance with ASTM A 780.

#### 3.2 EXCAVATION

Post holes shall be cleared of loose material. Waste material shall be spread where directed. The ground surface irregularities along the fence line shall be eliminated to the extent necessary to maintain a 2 inch clearance between the bottom of the fabric and finish grade.

#### 3.3 POST INSTALLATION

#### 3.3.1 Posts for Farm Style Fence

For wood posts, the Contractor shall excavate to depth indicated and brace post until backfill is completed. Backfill shall be placed in layers of 9 inches or less, moistened to optimum condition, and compacted with hand tampers or other approved method. Posts shall be set plumb and in proper alignment.

#### 3.4 RAILS

#### 3.4.1 Top Rail

Top rail shall be supported at each post to form a continuous brace between terminal posts. Where required, sections of top rail shall be joined using sleeves or couplings that will allow expansion or contraction of the rail. Top rail, if required for high security fence, shall be installed as indicated on the drawings.

## 3.5 BRACES AND TRUSS RODS

Braces and truss rods shall be installed as indicated and in conformance with the standard practice for the fence furnished. Horizontal (compression) braces and diagonal truss (tension) rods shall be installed on fences over 6 feet in height. A center brace or 2 diagonal truss rods shall be installed on 12 foot fences. Braces and truss rods shall extend from terminal posts to line posts. Diagonal braces shall form an angle of approximately 40 to 50 degrees with the horizontal. No bracing is required on fences 6 feet high or less if a top rail is installed.

#### 3.6 TENSION WIRES

Tension wires shall be installed along the top and bottom of the fence line and attached to the terminal posts of each stretch of the fence. Top tension wires shall be installed within the top 1 foot of the installed fabric. Bottom tension wire shall be installed within the bottom 6 inches of the installed fabric. Tension wire shall be pulled taut and shall be

LTMIARIV

free of sag.

- 3.7 BARBED WIRE SUPPORTING ARMS AND BARBED WIRE
- 3.7.1 General Requirements

Barbed wire supporting arms and barbed wire shall be installed as indicated and as recommended by the manufacturer. Supporting arms shall be anchored to the posts in a manner to prevent easy removal with hand tools Barbed wire shall be pulled taut and attached to the arms with clips or other means that will prevent easy removal.

3.7.2 Barbed Wire for Farm Style Fence

Wire shall be installed on the side of the post indicated. Wire shall be pulled taut to provide a smooth uniform appearance, free from sag. Wire shall be fastened to line posts at approximately 15 inch intervals unless indicated otherwise.

- 3.8 Not Used
  - -- End of Section --

LTMIARIV

SECTION 02921A

SEEDING 11/02

PART 1 GENERAL

#### 1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

ASTM INTERNATIONAL (ASTM)

ASTM C 602

(1995a) Agricultural Liming Materials

ASTM D 4972

(1995a) pH of Soils

ASTM D 5268

(1992; R 1996) Topsoil Used for

Landscaping Purposes

ASTM D 5883

(1996el) Use of Rotary Kiln Produced Expanded Shale, Clay or Slate (ESCS) as a Mineral Amendment in Topsoil Used for Landscaping and Related Purposes

U.S. DEPARTMENT OF AGRICULTURE (USDA)

AMS Seed Act

(1995) Federal Seed Act Regulations Part 201

#### 1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330L SUBMITTAL PROCEDURES:

SD-03 Product Data

Equipment; G, RO

Chemical Treatment Material; G, RO

Manufacturer's literature including physical characteristics, application and installation instructions for equipment, surface erosion control material and chemical treatment material.

A listing of equipment to be used for the seeding operation.

Delivery; G, RO

Delivery schedule.

Finished Grade and Topsoil; G, RO

2		
·		

LTMIARIV

Finished grade status.

Topsoil; G, RO

Availability of topsoil from the stripping and stock piling operation.

Quantity Check; G, RO

Bag count or bulk weight measurements of material used compared with area covered to determine the application rate and quantity installed.

Seed Establishment Period; G, RO

Calendar time period for the seed establishment period. When there is more than one seed establishment period, the boundaries of the seeded area covered for each period shall be described.

Maintenance Record; G, RO

Maintenance work performed, area repaired or reinstalled, diagnosis for unsatisfactory stand of grass plants.

Plant Maintenance; G, RO

Monthly watering timetable and a report reviewing the site for invasive plants and process for removal of invasive plants.

Application of Pesticide G,

Pesticide treatment plan with sequence of treatment work with dates and times. The pesticide trade name, EPA registration number, chemical composition, formulation, concentration of original and diluted material, application rate of active ingredients, method of application, area treated, amount applied; and the name and state license number of the state certified applicator shall be included.

SD-04 Samples

Delivered Topsoil; G, RO

Samples taken from several locations at the source.

Soil Amendments

A 10 pound sample.

Mulch;

A 10 pound sample.

SD-06 Test Reports

Equipment Calibration;

Certification of calibration tests conducted on the equipment used in the seeding operation.

SD-07 Certificates

Seed
Topsoil
pH Adjuster
Fertilizer
Organic Material
Soil Conditioner
Mulch
Asphalt Adhesive
Pesticide

Prior to the delivery of materials, certificates of compliance attesting that materials meet the specified requirements. Certified copies of the material certificates shall include the following:

- a. Seed. Classification, botanical name, common name, percent pure live seed, minimum percent germination and hard seed, maximum percent weed seed content, and date tested.
- b. Topsoil. Particle size, pH, organic matter content, textural class, soluble salts, chemical and mechanical analyses.
- - d. Fertilizer. Chemical analysis and composition percent.
  - e. Organic Material: Composition and source.
  - f. Soil Conditioner: Composition and source.
  - g. Mulch: Composition and source.
  - h. Pesticide. EPA registration number and registered uses.

# 1.3 MEASUREMENT AND PAYMENT

No seperate pyament will be made for the work covered under this section and all costs in connection herewith shall be included in the applicable contract price for the item to which the work pertains.

1.4 DELIVERY, INSPECTION, STORAGE, AND HANDLING

#### 1.4.1 Delivery

A delivery schedule shall be provided at least 10 calendar days prior to the first day of delivery.

#### 1.4.1.1 Delivered Topsoil

Prior to the delivery of any topsoil, its availability shall be verified in paragraph TOPSOIL. A soil test shall be provided for topsoil delivered to the site.

LTMIARIV

# 1.4.1.2 Soil Amendments

Soil amendments shall be delivered to the site in the original, unopened containers bearing the manufacturer's chemical analysis. In lieu of containers, soil amendments may be furnished in bulk. A chemical analysis shall be provided for bulk deliveries.

#### 1.4.1.3 Pesticides

Pesticide material shall be delivered to the site in the original, unopened containers bearing legible labels indicating the EPA registration number and the manufacturer's registered uses.

#### 1.4.2 Inspection

Seed shall be inspected upon arrival at the job site for conformity to species and quality. Seed that is wet, moldy, or bears a test date five months or older, shall be rejected. Other materials shall be inspected for compliance with specified requirements. The following shall be rejected: open soil amendment containers or wet soil amendments; topsoil that contains slag, cinders, stones, lumps of soil, sticks, roots, trash or other material over a minimum 1-1/2 inch diameter; and topsoil that contains viable plants and plant parts. Unacceptable materials shall be removed from the job site.

#### 1.4.3 Storage

Materials shall be stored in designated areas. Seed, lime, and fertilizer shall be stored in cool, dry locations away from contaminants. Chemical treatment material shall be stored according to manufacturer's instructions and not with seeding operation materials.

#### 1.4.4 Handling

Except for bulk deliveries, materials shall not be dropped or dumped from vehicles.

#### 1.4.5 Time Limitation

Hydroseeding time limitation for holding seed in the slurry shall be a maximum 24 hours.

## PART 2 PRODUCTS

# 2.1 SEED

#### 2.1.1 Seed Classification

State-certified seed of the latest season's crop shall be provided in original sealed packages bearing the producer's guaranteed analysis for percentages of mixture, purity, germination, hard seed, weed seed content, and inert material. Labels shall be in conformance with AMS Seed Act and applicable state seed laws.

# 2.1.2 Permanent Seed Species and Mixtures

Permanent seed species and mixtures shall be proportioned by weight as follows:

,		
Botanical Name	Common Name	pplication Rate lb/acre
	High Bank Planting	
Andropogon gerardii	Big Blue Stem	2.5
Andropogon scoparius	Little Blue Stem	2.0
Bouteloua curtipendula	Side Oats Grama	1.5
Elymus canadensis	Prairie Wild Rye	1.5
Panicum virgatum	Prairie Wild Rye Prairie Switch Grass	
Sorghastrum nutans	Indian Grass	2.0
sorgnaserum nucans	Indian Grass	3.0
		plication Rate
Botanical Name	Common Name	oz/acre
		., ,
Anemone cylindrica	Thimbleweed	1.0
Baptista leucantha	White Wild Indigo	1.3
Baptista leucophaea	Cream Wild Indigo	1.6
Cassia fasciculata	Partridge Pea	2.0
Desmodium illinoiense	Prarie Bundle-Flower	1.0
Echinacea pallida	Pale Purple Coneflowe	r 4.0
Eryngium yuccifolium	Rattlesnake Master	2.0
Liatris aspera	RoughBlazing Star	3.0
Liatris scairosa nieuwlandii	Blazing Star	1.0
Lupinus perennis	Wild Lupine	2.0
Monarda fistulosa	Prarie Bergamot	0.3
Petalostemum purureum	Purple Prairie Clover	3.0
Ratrbida pinnata	Yellow Coneflower	4.0
Rudbeckia hirta	Black-Eyed Susan	3.0
Silphium Iaciniatum	Compass Plant	2.0
Silphium terebinthinaceum	Prarie Dock	1.0
Solidago nemoralis	Old-Field Goldenrod	1.0
Solidago rigida	Stiff Goldenrod	2.0
Solidago speciosa	Showy Goldenrod	1.0
	Low Bank Planting	plication Rate
Botanical Name	Common Name	oz/acre
	Common Manie	OZ/ACIE
	1000000	
Atorus calamus	Sweet Flag	0.125
Agrostris alba	Redtop	2.0
Agrostis alba palustris	Creeping bent grass	0.5
Alisma subcordatum	Common water plantain	0.25
Eleocharis obtusa	Spike Rush	0.375
Juncus effusus	Common Rush	0.25
Leersia oryzyoides	Rice cut grass	0.125
Mimulus ringens	Monkey flower	0.125
Polygonum Pensylvanicum	Smartweed	0.5
Pontederia cordata	Pickerel weed	0.5
Sagittaria latifolia	Broad leaf Arrowhead	0.250
Scirpus latifolia	Soft stem bulrush	0.118
Sparganium eurycarpum	Bur reed	1.0
<u></u>		2.2

LTMIARIV

Avetna sativa - seed oats - will be added to the seed mix at 32.0 lb/acre as a cover crop. Seed mixtures shall not contain millet or any other large-seed producing grass.

#### 2.1.3 Quality

Weed seed shall be a maximum 1 percent by weight of the total mixture.

#### 2.1.4 Seed Mixing

The mixing of seed may be done by the seed supplier prior to delivery, or on site as directed.

#### 2.1.5 Substitutions

Substitutions will not be allowed without written request and approval from the Contracting Officer.

#### 2.2 TOPSOIL

Topsoil shall be as defined in ASTM D 5268. When available, the topsoil shall be the existing surface soil stripped and stockpiled onsite in accordance with Section 02300 EARTHWORK. When additional topsoil is required beyond the available topsoil from the stripping operation, topsoil shall be delivered and amended as recommended by the soil test for the seed specified. Topsoil shall be free from slag, cinders, stones, lumps of soil, sticks, roots, trash or other material over a minimum 1-1/2 inch diameter. Topsoil shall be free from viable plants and plant parts.

#### 2.3 SOIL AMENDMENTS

Soil amendments shall consist of pH adjuster, fertilizer, organic material and soil conditioners meeting the following requirements. Vermiculite shall not be used.

# - 2.3.1 pH Adjuster

The pH adjuster shall be an agricultural liming material in accordance with ASTM C 602. These materials may be burnt lime, hydrated lime, ground limestone, sulfur, or shells. The pH adjuster shall be used to create a favorable soil pH for the plant material specified.

## 2.3.1.1 Limestone

Limestone material shall contain a minimum calcium carbonate equivalent of 80 percent. Gradation: A minimum 95 percent shall pass through a No. 8 sieve and a minimum 55 percent shall pass through a No. 60 sieve. To raise soil pH, ground limestone shall be used.

# 2.3.1.2 Hydrated Lime

Hydrated lime shall contain a minimum calcium carbonate equivalent of 110 percent. Gradation: A minimum 100 percent shall pass through a No. 8 sieve and a minimum 97 percent shall pass through a No. 60 sieve.

## 2.3.1.3 Burnt Lime

Burnt lime shall contain a minimum calcium carbonate equivalent of 140 percent. Gradation: A minimum 95 percent shall pass through a No. 8

LTMIARIV

sieve and a minimum 35 percent shall pass through a No. 60 sieve.

#### 2.3.2 Fertilizer

The nutrients ratio shall be 5 percent nitrogen, 10 percent phosphorus, and 10 percent potassium. Fertilizer shall be controlled release commercial grade, free flowing, uniform in composition, and consist of a nitrogen-phosphorus-potassium ratio. The fertilizer shall be derived from sulphur coated urea, urea formaldehyde, plastic or polymer coated pills, or isobutylenediurea (IBDU). Fertilizer shall be balanced with the inclusion of trace minerals and micro-nutrients.

#### 2.3.3 Not Used

#### 2.3.4 Organic Material

Organic material shall consist of either bonemeal, rotted manure, decomposed wood derivatives, recycled compost, or worm castings.

#### 2.3.4.1 Bonemeal

Bonemeal shall be finely ground, steamed bone product containing from 2 to 4 percent nitrogen and 16 to 40 percent phosphoric acid.

# 2.3.4.2 Rotted Manure

Rotted manure shall be unleached horse, chicken or cattle manure containing a maximum 25 percent by volume of straw, sawdust, or other bedding materials. It shall contain no chemicals or ingredients harmful to plants. The manure shall be heat treated to kill weed seeds and be free of stones, sticks, and soil.

#### 2.3.4.3 Decomposed Wood Derivatives

Decomposed wood derivatives shall be ground bark, sawdust, yard trimmings, or other wood waste material that is free of stones, sticks, soil, and toxic substances harmful to plants, and is fully composted or stabilized with nitrogen.

# 2.3.4.4 Recycled Compost

Compost shall be a well decomposed, stable, weed free organic matter source. Compost shall be derived from food; agricultural or industrial residuals; biosolids (treated sewage sludge); yard trimmings; or source-separated or mixed solid waste. The compost shall possess no objectionable odors and shall not resemble the raw material from which it was derived. The material shall not contain substances toxic to plants. Gradation: The compost material shall pass through a 3/8 inch screen, possess a pH of 5.5 to 8.0, and have a moisture content between 35-55 percent by weight. The material shall not contain more than 1 percent by weight of man-made foreign matter. Compost shall be cleaned of plastic materials larger than 2 inches in length. The Contractor shall comply with EPA requirements.

#### 2.3.4.5 Worm Castings

Worm castings shall be screened from worms and food source, and shall be commercially packaged.

LTMIARIV

#### 2.3.5 Soil Conditioner

Soil conditioner shall be sand, super absorbent polymers, calcined clay, or gypsum for use singly or in combination to meet the requirements of the soil test.

#### 2.3.5.1 Sand

Sand shall be clean and free of toxic materials. Gradation: A minimum 95 percent by weight shall pass a No. 10 sieve and a minimum 10 percent by weight shall pass a No. 16 sieve. Greensand shall be balanced with the inclusion of trace minerals and nutrients.

# 2.3.5.2 Super Absorbent Polymers

To improve water retention in soils, super absorbent polymers shall be sized and applied according to the manufacturer's recommendations. Polymers shall be added as a soil amendment and be cross-linked polyacrylamide, with an absorption capacity of 250-400 times its weight. Polymers shall also be added to the seed and be a starch grafted polyacrylonitrite, with graphite added as a tacky sticker. It shall have an absorption capacity of 100 plus times its weight.

# 2.3.5.3 Calcined Clay

Calcined clay shall be granular particles produced from montmorillonite clay calcined to a minimum temperature of 1200 degrees F. Gradation: A minimum 90 percent shall pass a No. 8 sieve; a minimum 99 percent shall be retained on a No. 60 sieve; and a maximum 2 percent shall pass a No. 100 sieve. Bulk density: A maximum 40 pounds per cubic foot.

#### 2.3.5.4 Gypsum

Gypsum shall be commercially packaged, free flowing, and a minimum 95 percent calcium sulfate by volume.

# 2.3.5.5 Expanded Shale, Clay, or Slate (ESCS)

Rotary kiln produced ESCS material shall be in conformance with ASTM D 5883.

#### 2.4 MULCH

Mulch shall be free from weeds, mold, and other deleterious materials. Mulch materials shall be native to the region.

#### 2.4.1 Straw

Straw shall be stalks from oats, wheat, rye, barley, or rice, furnished in air-dry condition and with a consistency for placing with commercial mulch-blowing equipment.

#### 2.4.2 Hay

Hay shall be native hay, sudan-grass hay, broomsedge hay, or other herbaceous mowings, furnished in an air-dry condition suitable for placing with commercial mulch-blowing equipment.

LTMIARIV

# 2.4.3 Wood Cellulose Fiber

Wood cellulose fiber shall not contain any growth or germination-inhibiting factors and shall be dyed an appropriate color to facilitate placement during application. Composition on air-dry weight basis: 9 to 15 percent moisture, pH range from 4.5 to 6.0.

# 2.4.4 Paper Fiber

Paper fiber mulch shall be recycled news print that is shredded for the purpose of mulching seed.

#### 2.5 NOT USED

#### 2.6 WATER

Water shall be the responsibility of the Contractor, unless otherwise noted. Water shall not contain elements toxic to plant life.

#### 2.7 PESTICIDE

Pesticide shall be insecticide, herbicide, fungicide, nematocide, rodenticide or miticide. For the purpose of this specification, a soil fumigant shall have the same requirements as a pesticide. The pesticide material shall be EPA registered and approved.

#### 2.8 SURFACE EROSION CONTROL MATERIAL

Surface erosion control material shall conform to the following:

# 2.8.1 Surface Erosion Control Blanket

Blanket shall be machine produced mat of wood excelsior formed from a web of interlocking wood fibers; covered on one side with either knitted straw blanket-like mat construction; covered with biodegradable plastic mesh; or interwoven biodegradable thread, plastic netting, or twisted kraft paper cord netting.

# 2.8.2 Surface Erosion Control Fabric

Fabric shall be knitted construction of polypropylene yarn with uniform mesh openings 3/4 to 1 inch square with strips of biodegradable paper. Filler paper strips shall have a minimum life of 6 months.

# 2.8.3 Surface Erosion Control Net

Net shall be heavy, twisted jute mesh, weighing approximately 1.22 pounds per linear yard and 4 feet wide with mesh openings of approximately 1 inch square.

- 2.8.4 Not Used
- 2.8.5 Not Used
- 2.8.6 Erosion Control Material Anchors

Erosion control anchors shall be as recommended by the manufacturer.

LTMIARIV

#### PART 3 EXECUTION

#### 3.1 INSTALLING SEED TIME AND CONDITIONS

## 3.1.1 Seeding Time

Seed shall be installed from 15 March to 15 April for spring establishment; from 15 April to 15 June for summer establishment; and from 1 September to 15 November for fall establishment, but not when the ground is frozen.

#### 3.1.2 Seeding Conditions

Seeding operations shall be performed only during periods when beneficial results can be obtained. When drought, excessive moisture, or other unsatisfactory conditions prevail, the work shall be stopped when directed. When special conditions warrant a variance to the seeding operations, proposed alternate times shall be submitted for approval.

# 3.1.3 Equipment Calibration

Immediately prior to the commencement of seeding operations, calibration tests shall be conducted on the equipment to be used. These tests shall confirm that the equipment is operating within the manufacturer's specifications and will meet the specified criteria. The equipment shall be calibrated a minimum of once every day during the operation. The calibration test results shall be provided within 1 week of testing.

#### 3.1.4 Soil Test

Delivered topsoil, existing soil in smooth graded areas, and stockpiled topsoil shall be tested in accordance with ASTM D 5268 and ASTM D 4972 for determining the particle size, pH, organic matter content, textural class, chemical analysis, soluble salts analysis, and mechanical analysis. Sample collection on site shall be random over the entire site. Sample collection for stockpiled topsoil shall be at different levels in the stockpile. The soil shall be free from debris, noxious weeds, toxic substances, or other materials harmful to plant growth. The test shall determine the quantities and type of soil amendments required to meet local growing conditions for the seed species specified.

#### 3.2 SITE PREPARATION

## 3.2.1 Finished Grade and Topsoil

The Contractor shall verify that finished grades are as indicated on drawings, and the placing of topsoil, smooth grading, and compaction requirements have been completed in accordance with Section 02300 EARTHWORK, prior to the commencement of the seeding operation.

#### 3.2.2 Application of Soil Amendments

#### 3.2.2.1 Applying pH Adjuster

The pH adjuster shall be applied as recommended by the soil test. The pH adjuster shall be incorporated into the soil to a maximum  $\,4\,$  inch depth or may be incorporated as part of the tillage operation.

LTMIARIV

# 3.2.2.2 Applying Fertilizer

The fertilizer shall be applied as recommended by the soil test Fertilizer shall be incorporated into the soil to a maximum 4 inch depth or may be incorporated as part of the tillage or hydroseeding operation.

# 3.2.2.3 Applying Soil Conditioner

The soil conditioner shall be as recommended by the soil test. The soil conditioner shall be spread uniformly over the soil a minimum 1 inch depth and thoroughly incorporated by tillage into the soil to a maximum 4 inch depth.

# 3.2.2.4 Applying Super Absorbent Polymers

Polymers shall be spread uniformly over the soil as recommended by the manufacturer and thoroughly incorporated by tillage into the soil to a maximum 4 inch depth.

#### 3.2.3 Tillage

Soil on slopes up to a maximum 3-horizontal-to-1-vertical shall be tilled to a minimum 4 inch depth. On slopes between 3-horizontal-to-1-vertical and 1-horizontal-to-1 vertical, the soil shall be tilled to a minimum 2 inch depth by scarifying with heavy rakes, or other method. Rototillers shall be used where soil conditions and length of slope permit. On slopes 1-horizontal-to-1 vertical and steeper, no tillage is required. Drainage patterns shall be maintained as indicated on drawings. Areas compacted by construction operations shall be completely pulverized by tillage. Soil used for repair of surface erosion or grade deficiencies shall conform to topsoil requirements. The pH adjuster, fertilizer, and soil conditioner may be applied during this procedure.

#### 3.2.4 Prepared Surface

#### . 3.2.4.1 Preparation

The prepared surface shall be a maximum 1 inch below the adjoining grade of any surfaced area. New surfaces shall be blended to existing areas. The prepared surface shall be completed with a light raking to remove debris.

# 3.2.4.2 Lawn Area Debris

Debris and stones over a minimum 5/8 inch in any dimension shall be removed from the surface.

# 3.2.4.3 Field Area Debris

Debris and stones over a minimum 3 inch in any dimension shall be removed from the surface.

## 3.2.4.4 Protection

Areas with the prepared surface shall be protected from compaction or damage by vehicular or pedestrian traffic and surface erosion.

# LTMIARIV

#### 3.3 INSTALLATION

Prior to installing seed, any previously prepared surface compacted or damaged shall be reworked to meet the requirements of paragraph SITE PREPARATION. Seeding operations shall not take place when the wind velocity will prevent uniform seed distribution.

#### 3.3.1 Installing Seed

Seeding method shall be Broadcast Seeding. Seeding procedure shall ensure even coverage. Gravity feed applicators, which drop seed directly from a hopper onto the prepared soil, shall not be used because of the difficulty in achieving even coverage, unless otherwise approved. Absorbent polymer powder shall be mixed with the dry seed at the rate recommended by the manufacturer.

#### 3.3.1.1 Broadcast Seeding

Seed shall be uniformly broadcast at the rate given in the seeding schedule using broadcast seeders. Half the total rate of seed application shall be broadcast in 1 direction, with the remainder of the seed rate broadcast at 90 degrees from the first direction. Seed shall be covered a maximum 1/4 inch depth by disk harrow, steel mat drag, cultipacker, or other approved device.

#### 3.3.1.2 Rolling

The entire area shall be firmed with a roller not exceeding 90 pounds per foot roller width. Slopes over a maximum 3-horizontal-to-1 vertical shall not be rolled. Areas seeded with seed drills equipped with rollers shall not be rolled.

# 3.3.2 Mulching

# 3.3.2.1 Hay or Straw Mulch

Hay or straw mulch shall be spread uniformly at the rate of 2 tons per acre. Mulch shall be spread by hand, blower-type mulch spreader, or other approved method. Mulching shall be started on the windward side of relatively flat areas or on the upper part of steep slopes, and continued uniformly until the area is covered. The mulch shall not be bunched or clumped. Sunlight shall not be completely excluded from penetrating to the ground surface. All areas installed with seed shall be mulched on the same day as the seeding. Mulch shall be anchored immediately following spreading.

#### 3.3.2.2 Mechanical Anchor

Mechanical anchor shall be a V-type-wheel land packer; a scalloped-disk land packer designed to force mulch into the soil surface; or other suitable equipment.

# 3.3.2.3 Asphalt Adhesive Tackifier

Asphalt adhesive tackifier shall be sprayed at a rate between 10 to 13 gallons per 1000 square feet. Sunlight shall not be completely excluded from penetrating to the ground surface.

LTMIARIV

# 3.3.2.4 Non-Asphaltic Tackifier

Hydrophilic colloid shall be applied at the rate recommended by the manufacturer, using hydraulic equipment suitable for thoroughly mixing with water. A uniform mixture shall be applied over the area.

# 3.3.2.5 Asphalt Adhesive Coated Mulch

Hay or straw mulch may be spread simultaneously with asphalt adhesive applied at a rate between 10 to 13 gallons per 1000 square feet, using power mulch equipment which shall be equipped with suitable asphalt pump and nozzle. The adhesive-coated mulch shall be applied evenly over the surface. Sunlight shall not be completely excluded from penetrating to the ground surface.

# 3.3.2.6 Wood Cellulose Fiber, Paper Fiber, and Recycled Paper

Wood cellulose fiber, paper fiber, or recycled paper shall be applied as part of the hydroseeding operation. The mulch shall be mixed and applied in accordance with the manufacturer's recommendations.

#### 3.3.3 Watering Seed

Watering shall be started immediately after completing the seeding of an area. Water shall be applied to supplement rainfall at a rate sufficient to ensure moist soil conditions to a minimum 1 inch depth. Run-off and puddling shall be prevented. Watering trucks shall not be driven over turf areas, unless otherwise directed. Watering of other adjacent areas or plant material shall be prevented.

# 3.4 SURFACE EROSION CONTROL

# 3.4.1 Surface Erosion Control Material

Where indicated or as directed, surface erosion control material shall be installed in accordance with manufacturer's instructions. Placement of the material shall be accomplished without damage to installed material or without deviation to finished grade.

## 3.4.2 Temporary Seeding

The application rate shall be 30 pounds per acre annual rye. When directed during contract delays affecting the seeding operation or when a quick cover is required to prevent surface erosion, the areas designated shall be seeded in accordance with temporary seed species listed under Paragraph SEED.

#### 3.4.2.1 Soil Amendments

When soil amendments have not been applied to the area, the quantity of 1/2 of the required soil amendments shall be applied and the area tilled in accordance with paragraph SITE PREPARATION. The area shall be watered in accordance with paragraph Watering Seed.

# 3.4.2.2 Remaining Soil Amendments

The remaining soil amendments shall be applied in accordance with the paragraph Tillage when the surface is prepared for installing seed.

LTMIARIV

#### 3.5 QUANTITY CHECK

For materials provided in bags, the empty bags shall be retained for recording the amount used. For materials provided in bulk, the weight certificates shall be retained as a record of the amount used. The amount of material used shall be compared with the total area covered to determine the rate of application used. Differences between the quantity applied and the quantity specified shall be adjusted as directed.

#### 3.6 APPLICATION OF PESTICIDE

When application of a pesticide becomes necessary to remove a pest or disease, a pesticide treatment plan shall be submitted and coordinated with the installation pest management program.

# 3.6.1 Technical Representative

The certified installation pest management coordinator shall be the technical representative, and shall be present at all meetings concerning treatment measures for pest or disease control. They may be present during treatment application.

# 3.6.2 Application

A state certified applicator shall apply required pesticides in accordance with EPA label restrictions and recommendations. Clothing and personal protective equipment shall be used as specified on the pesticide label. A closed system is recommended as it prevents the pesticide from coming into contact with the applicator or other persons. Water for formulating shall only come from designated locations. Filling hoses shall be fitted with a backflow preventer meeting local plumbing codes or standards. Overflow shall be prevented during the filling operation. Prior to each day of use, the equipment used for applying pesticide shall be inspected for leaks, clogging, wear, or damage. Any repairs are to be performed immediately. A pesticide plan shall be submitted.

# 3.7 RESTORATION AND CLEAN UP

# 3.7.1 Restoration

Existing turf areas, pavements, and facilities that have been damaged from the seeding operation shall be restored to original condition at Contractor's expense.

# 3.7.2 Clean Up

Excess and waste material shall be removed from the seeded areas and shall be disposed offsite. Adjacent paved areas shall be cleaned.

# 3.8 PROTECTION OF INSTALLED AREAS

Immediately upon completion of the seeding operation in an area, the area shall be protected against traffic or other use by erecting barricades and providing signage as required, or as directed.

LTMIARIV

# 3.9 SEED ESTABLISHMENT PERIOD

# 3.9.1 Commencement

The seed establishment period to obtain a healthy stand of grass plants shall begin on the first day of seeding work under this contract and shall continue through the remaining life of the contract and end 6 months after the last day of the seeding operation required by this contract. Written calendar time period shall be furnished for the seed establishment period. When there is more than 1 seed establishment period, the boundaries of the seeded area covered for each period shall be described. The seed establishment period shall be modified for inclement weather, shut down periods, or for separate completion dates of areas.

# 3.9.2 Satisfactory Stand of Grass Plants

Grass plants shall be evaluated for species and health when the grass plants are a minimum 1 inch high.

#### 3.9.2.1 Field Area

A satisfactory stand of grass plants from the seeding operation for a field area shall be a minimum 100 grass plants per square foot. The total bare spots shall not exceed 2 percent of the total seeded area.

# 3.9.3 Maintenance During Establishment Period

Maintenance of the seeded areas shall include eradicating weeds, insects and diseases; protecting embankments and ditches from surface erosion; maintaining erosion control materials and mulch; protecting installed areas from traffic; mowing; watering; and post-fertilization.

# 3.9.3.1 Post-Fertilization

The fertilizer shall be 10-10-010 applied as recommended by manufacturer. The application shall be timed prior to the advent of winter dormancy and shall be made without burning the installed grass plants.

# 3.9.3.2 Pesticide Treatment

Treatment for disease or pest shall be in accordance with paragraph APPLICATION OF PESTICIDE.

# 3.9.3.3 Repair or Reinstall

Unsatisfactory stand of grass plants and mulch shall be repaired or reinstalled, and eroded areas shall be repaired in accordance with paragraph SITE PREPARATION.

#### 3.9.3.4 Maintenance Record

A record of each site visit shall be furnished, describing the maintenance work performed; areas repaired or reinstalled; and diagnosis for unsatisfactory stand of grass plants.

-- End of Section --

# SECTION 02930

# LIVE SILTATION AND BRUSH LAYERING 06/98

PART 1 GENERAL

#### 1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN NURSERY AND LANDSCAPE ASSOCIATION (ANLA)

ANLA 260.1

(1996) Nursery Stock

ASTM INTERNATIONAL (ASTM)

ASTM C 602

(1995a) Agricultural Liming Materials

ASTM D 5268

(1992; R 1996) Topsoil Used for

Landscaping Purposes

ASTM D 5883

(1996el) Use of Rotary Kiln Produced Expanded Shale, Clay or Slate (ESCS) as a Mineral Amendment in Topsoil Used for Landscaping and Related Purposes

# 1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330L SUBMITTAL PROCEDURES:

SD-03 Product Data

Equipment; G, RO

A listing of equipment to be used for the planting operation.

Delivery

Harvesting, Delivery, and construction schedule.

Prior to harvesting, delivery, and construction, the Contractor shall submit a proposed harvesting and construction shedule, including source of supply of living cuttings to the Contracting Officer for review and approval. No harvesting, delivery or construction shall be performed until this schedule is approved by the Contracting Officer.

Plant Establishment Period; G, ED

Calendar time period for the plant establishment period. When

LTMIARIV

there is more than one establishment period, the boundaries of the planted areas covered for each period shall be described.

Maintenance Record

Maintenance work performed, quantity of plant losses, and replacements; and diagnosis of unhealthy plant material.

Application of Pesticide

Pesticide treatment plan with sequence of treatment work with dates and times. The pesticide trade name, EPA registration number, chemical composition, formulation, concentration of original and diluted material, application rate of active ingredients, method of application, area treated, amount applied; and the name and state license number of the state certified applicator shall be included.

#### SD-07 Certificates

Plant Material; G, RO
pH Adjuster
Fertilizer
Organic Material
Soil Conditioner
Organic Mulch
Mycorrhizal Fungi Inoculum
Pesticide; G, RO

Prior to delivery of materials, certificates of compliance attesting that materials meet the specified requirements. Certified copies of the material certificates shall include the following.

- a. Plant Material: Classification, botanical name, common name, size, quantity by species, and location where grown.
- b. pH Adjuster: Sieve analysis and calcium carbonate equivalent.
  - c. Fertilizer: Chemical analysis and composition percent.
  - d. Organic Material: Composition and source.
  - e. Soil Conditioner: Composition and source.
- f. Organic Mulch: Composition, source, and treatment against fungi growth.
  - g. Mycorrhizal Fungi Inoculum: Plant material treated.
  - h. Pesticide. EPA registration number and registered uses.

# SD-10 Operation and Maintenance Data

Maintenance Instructions; G, RO

Instruction for year-round care of installed plant material.

LTMIARIV

#### 1.3 SOURCE INSPECTIONS

The nursery or source of plant material and the source of delivered topsoil shall be subject to inspection.

# 1.4 DELIVERY, INSPECTION, STORAGE, AND HANDLING

#### 1.4.1 Delivery; G, RO

A harvesting, delivery, and construction schedule shall be provided at least 10 calendar days prior to the first day of delivery. Harvesting, delivery, and construction shall take place when plants are dormant.

## 1.4.1.1 Plant Material Identification

Plant material shall be identified with attached, durable, waterproof labels and weather-resistant ink, stating the correct botanical plant name and size.

# 1.4.1.2 Protection During Delivery

Plant material shall be protected during delivery to prevent desiccation and damage to the branches, trunk, root system, or earth ball. Branches shall be protected by tying-in. Exposed branches shall be covered during transport.

## 1.4.1.3 Delivered Topsoil

Prior to the delivery of any topsoil, the availability of topsoil shall be verified in paragraph TOPSOIL. A soil test shall be provided for delivered topsoil.

#### 1.4.1.4 Soil Amendments

Soil amendments shall be delivered to the site in the original, unopened containers bearing the manufacturer's chemical analysis. In lieu of containers, soil amendments may be furnished in bulk. A chemical analysis shall be provided for bulk deliveries.

#### 1.4.1.5 Pesticide Material

Pesticide material shall be delivered to the site in the original, unopened containers bearing legible labels indicating the Environmental Protection Agency (EPA) registration number and the manufacturer's registered uses.

# 1.4.2 Inspection

Plant material shall be well shaped, vigorous and healthy with a healthy, well branched root system, free from disease, harmful insects and insect eggs, sun-scald injury, disfigurement or abrasion. Plant material shall be checked for unauthorized substitution and to establish nursery grown status. Plant material showing desiccation, abrasion, sun-scald injury, disfigurement, or unauthorized substitution shall be rejected. The plant material shall exhibit typical form of branch to height ratio; and meet the caliper and height measurements specified. Plant material that measures less than specified, or has been poled, topped off or headed back, shall be rejected. Container-grown plant material shall show new fibrous roots and

LTMIARIV

the root mass shall contain its shape when removed from the container. Plant material with broken or cracked balls; or broken containers shall be rejected. Bare-root plant material that is not dormant or is showing roots were pulled from the ground shall be rejected. Other materials shall be inspected for compliance with paragraph PRODUCTS. Open soil amendment containers or wet soil amendments shall be rejected. Topsoil that contains slag, cinders, stones, lumps of soil, sticks, roots, trash or other material larger than 1-1/2 inch diameter shall be rejected. Topsoil that contains viable plant material and plant parts shall be rejected. Unacceptable material shall be removed from the job site.

#### 1.4.3 Storage

#### 1.4.3.1 Plant Material Storage

Plant material not installed on the day of arrival at the site shall be stored and protected in designated areas. Plant material shall not be stored longer than 30 days. Plant material shall be protected from direct exposure to wind and sun. Bare-root plant material shall be heeled-in. All plant material shall be kept in a moist condition by watering with a fine mist spray until installed.

# 1.4.3.2 Other Material Storage

Storage of other material shall be in designated areas. Soil amendments shall be stored in dry locations and away from contaminants. Chemical treatment material shall be stored according to manufacturer's instructions and not with planting operation material.

## 1.4.4 Handling

Plant material shall not be injured in handling. Cracking or breaking the earth ball of balled and burlapped plant material shall be avoided. Plant material shall not be handled by the trunk or stems. Materials shall not be dropped from vehicles.

#### 1.4.5 Time Limitation

Except for container-grown plant material, the time limitation from digging to installing plant material shall be a maximum 90 days. The time limitation between installing the plant material and placing the mulch shall be a maximum 24 hours.

#### 1.5 PLANT MAINTENANCE

Live branch layers shall be maintained and monitored by the Contractor for one (1) year after the end of the construction contract time. The contractor shall replace all diseased and dead vegetation caused by factors other than stream erosion. The Contractor shall keep vegetation cleared of debris after all storm events within 24 hours after being notified by the Contracting Officer or owner. All dead wood and vegetation shall be pruned as needed. All live branch layers shall be watered as required by the site conditions. The Little Miami River May be used as a water source; however, it shall be the Contractor's responsibility to supply water if The Little Miami River is not used. Any costs associated with supplying water shall be the responsibility of the Contractor and shall be included in the overall costs. The Contractor shall maintain a 75% care and replacement warranty for all live branch layering with (1) potential replacement period

LTMIARIV

at the end of the plant maintenance work. The period of care and replacement shall begin after final inspection and approval of the installation of all live branch layering and continue fo one year, with one potential replacement period.

#### 1.6 MEASUREMENT AND PAYMENT

#### 1.6.1 Posts and Stakes

Posts and stakes shall be measured and paid for at the contract unit price per linear foot of stream bank that "Live Posts and Live Stakes" (installed) as listed in the Bid Schedule. Payment will be full compensation for harvesting, installing, maintenance and warranty, including all materials, labor, equipment, tools, and incidentals necessary to complete the work as specified in hese special provisions and on the plans.

#### 1.6.2 Live Branch Layering

Live branch layering shall be measured and paid for at the contract unit price per row/per linear foot of stream bank that "Live Branch Layering" (installed) as listed in the Bid Schedule. Payment will be full compensation for harvesting, installing, maintenance and warranty, inluding all materials, labor, equipment, tools, and incidentals necessary to complete the work as specified in these special provisions and on the plans.

#### 1.6.3 Shrubs

Shrubs shall be measured and paid for at the contract unit price per plant as listed in the Bid Schedule. Payment for planting shrubs shall be full compensation for furnishing, installing, maintnenance and warranty, including all materials, labor, equipment, tools, and incidentals necessary to complete the work as specified in these special provisions and on the plans.

#### 1.6.4 Trees

Trees shall be measured and paid for at the contract unit price per plant as listed in the Bid Schedule. Payment for planting trees shall be full compensation for furnishing, installing, maintenance and warranty, including all materials, labor, equipment, tools, and incidentals necessary to complete the work as specified in these special provisions and on the plans.

# PART 2 PRODUCTS

# 2.1 PLANT MATERIAL

#### 2.1.1 Plant Material Classification

The plant material shall be nursery grown stock conforming to ANLA Z60.1 and shall be the species specified herein.

# 2.1.2 Plant Schedule

The plant schedule shall provide botanical names as included in one or more of the publications listed under "Nomenclature" in ANLA Z60.1.

#### LTMIARIV

# 2.1.3 Shrub Species

Shrub species to be used on the upper bank (above elevation 491) shall be as follows: Flame Azalea, Coralberry, Silky Dogwood, Hawthorn, Cocklespur Hawthorn, Washington Hawthorn, Staghorn Sumac, Arrow-Wood Viburnum, Decideuous Holly, Wild Hydrangea, Kentucky Coffee Tree, New Jersey Tea, Allegheny Serviceberry, Downy Serviceberry, Spicebush, Flameleaf Sumac, Smooth Sumac, Maple Leaf Viburnum, Witch Hazel. Shrub Species to be used on the lower bank (below elevation 491) shall be as follows: Smooth Azalea, Chokeberry, Roughleaf Dogwood, Elderberry, Alder Smooth.

## 2.1.4 Tree Species

Tree Species to be used on the upper bank (above elevation 491) shall be as follows: Bitternut Hickory, Shagbark Hickory, Black Locust, Post Oak, Black Walnut, Chinkapin Oak, Persimmon, Pin Oak, Red Oak, White Oak, Sassafras, Sweetgum, Green Ash, Black Oak, Paw Paw.

#### 2.1.5 Substitutions

Substitutions will not be permitted without written request and approval from the Contracting Officer.

#### 2.1.6 Quality

Well shaped, well grown, vigorous plant material having healthy and well branched root systems in accordance with ANLA Z60.1 shall be provided. Plant material shall be provided free from disease, harmful insects and insect eggs, sun-scald injury, disfigurement and abrasion. Plant material shall be free of shock or damage to branches, trunk, or root systems, which may occur from the digging and preparation for shipment, method of shipment, or shipment. Plant quality is determined by the growing conditions; method of shipment to maintain health of the root system; and growth of the trunk and crown as follows.

# - 2.1.7 Growing Conditions

Plant material shall be native to or well-suited to the growing conditions of the project site. Plant material shall be grown under climatic conditions similar to those at the project site.

# 2.1.8 Method of Shipment to Maintain Health of Root System

# 2.1.8.1 Balled and Burlapped (BB) Plant Material

Ball size and ratio shall be in accordance with ANLA Z60.1. The ball shall be of a diameter and depth to encompass enough fibrous and feeding root system necessary for the full recovery of the plant. The plant stem or trunk shall be centered in the ball. All roots shall be clean cut at the ball surface. Roots shall not be pulled from the ground. Before shipment the root ball shall be dipped in gels containing mycorrhizal fungi inoculum. The root ball shall be completely wrapped with burlap or other suitable material and securely laced with biodegradable twine.

# 2.1.8.2 Balled and Potted (Pot) Plant Material

Ball size and ratio shall be in accordance with ANLA Z60.1. The ball shall be of a diameter and depth to encompass enough fibrous and feeding root system necessary for the full recovery of the plant. Removal shall be done

LTMIARTV

by hand digging or mechanical devices. The plant stem or trunk shall be centered in the ball. All roots shall be clean cut at the ball surface. Roots shall not be pulled from the ground. Before shipment the root ball shall be dipped in gels containing mycorrhizal fungi inoculum. Container shall be used to retain the ball unbroken. Container shall be rigid to hold ball shape and protect root mass during shipping.

# 2.1.8.3 Balled and Platform (BP) Plant Material

Ball size and ratio shall be in accordance with ANLA Z60.1. Plants shall be prepared as balled and burlapped plant material and securely fastened to wood platform for shipping.

# 2.1.8.4 Bare-Root (BR) Plant Material

Minimum root spread shall be in accordance with ANLA Z60.1. A well branched root system characteristic of the species specified shall be provided. Roots shall not be pulled from the ground. Bare-root plant material shall be inoculated with mycorrhizal fungi during germination in the nursery. Before shipment the root system shall be dipped in gels containing mycorrhizal fungi inoculum. Bare-root plant material shall be dormant. The root system shall be protected from drying out.

# 2.1.8.5 Container-Grown (C) Plant Material

Container size shall be in accordance with ANLA Z60.1. Plant material shall be grown in a container over a duration of time for new fibrous roots to have developed and for the root mass to retain its shape and hold together when removed from the container. Container-grown plant material shall be inoculated with mycorrhizal fungi during germination in the nursery. Before shipment the root system shall be dipped in gels containing mycorrhizal fungi inoculum. The container shall be sufficiently rigid to hold ball shape and protect root mass during shipping.

# 2.1.9 Growth of Trunk and Crown

# 2.1.9.1 Deciduous Trees

A height to caliper relationship shall be provided in accordance with ANLA Z60.1. Height of branching shall bear a relationship to the size and species of tree specified and with the crown in good balance with the trunk. The trees shall not be "poled" or the leader removed.

- a. Single stem: The trunk shall be reasonably straight and symmetrical with crown and have a persistent main leader.
- b. Multi-stem: All countable stems, in aggregate, shall average the size specified. To be considered a stem, there shall be no division of the trunk which branches more than 6 inches from ground level.
- c. Specimen: The tree provided shall be well branched and pruned naturally according to the species. The form of growth desired, which may not be in accordance with natural growth habit, shall be as indicated.

#### 2.1.10 Plant Material Size

Plant material shall be furnished in sizes indicated on the drawings.

LTMIARIV

Plant material larger in size than specified may be provided at no additional cost to the Government.

# 2.1.11 Plant Material Measurement

Plant material measurements shall be in accordance with ANLA Z60.1.

# 2.2 TOPSOIL

Topsoil shall be as defined in ASTM D 5268. When available, the topsoil shall be the existing surface soil stripped and stockpiled onsite in accordance with Section 02300 EARTHWORK. When additional topsoil is required beyond the available topsoil from the stripping operation, topsoil shall be delivered and amended as recommended by the soil test for the plant material specified. Topsoil shall be free from slag, cinders, stones, lumps of soil, sticks, roots, trash or other material over a minimum 1-1/2 inch diameter. Topsoil shall be free from viable plants and plant parts.

#### 2.3 SOIL AMENDMENTS

Soil amendments shall consist of pH adjuster, fertilizer, organic material and soil conditioners meeting the following requirements. Vermiculite is not recommended.

### 2.3.1 pH Adjuster

The pH adjuster shall be an agricultural liming material in accordance with ASTM C 602. These materials may be burnt lime, hydrated lime, ground limestone, or shells. The pH adjuster shall be used to create a favorable soil pH for the plant material specified.

# 2.3.1.1 Limestone

Limestone material shall contain a minimum calcium carbonate equivalent of 80 percent. Gradation: A minimum 95 percent shall pass through a No. 8 sieve and a minimum 55 percent shall pass through a No. 60 sieve. To raise soil pH, ground limestone shall be used.

# 2.3.1.2 Hydrated Lime

Hydrated lime shall contain a minimum calcium carbonate equivalent of 110 percent. Gradation: A minimum 100 percent shall pass through a No. 8 sieve and a minimum 97 percent shall pass through a No. 60 sieve.

#### 2.3.1.3 Burnt Lime

Burnt lime shall contain a minimum calcium carbonate equivalent of 140 percent. Gradation: A minimum 95 percent shall pass through a No. 8 sieve and a minimum 35 percent shall pass through a No. 60 sieve.

#### 2.3.2 Fertilizer

Fertilizer shall meet the requirements shown on the plans.

# 2.3.3 Organic Material

Organic material shall consist of either bonemeal, peat, rotted manure, decomposed wood derivatives, recycled compost, or worm castings.

#### 2.3.3.1 Bonemeal

Bonemeal shall be a finely ground, steamed bone product containing from 2 to 4 percent nitrogen and 16 to 40 percent phosphoric acid.

#### 2.3.3.2 Rotted Manure

Rotted manure shall be unleached horse, chicken, or cattle manure containing a maximum 25 percent by volume of straw, sawdust, or other bedding materials. Manure shall contain no chemicals or ingredients harmful to plants. The manure shall be heat treated to kill weed seeds and shall be free of stones, sticks, and soil.

# 2.3.3.3 Decomposed Wood Derivatives

Decomposed wood derivatives shall be ground bark, sawdust, or other wood waste material free of stones, sticks, and toxic substances harmful to plants, and stabilized with nitrogen.

# 2.3.3.4 Recycled Compost

Compost shall be a well decomposed, stable, weed free organic matter source. It shall be derived from food, agricultural, or industrial residuals; biosolids (treated sewage sludge); yard trimmings; or source-separated or mixed solid waste. The compost shall possess no objectionable odors and shall not resemble the raw material from which it was derived. The material shall not contain substances toxic to plants. Gradation: The compost material shall pass through a 3/8 inch screen, possess a pH of 5.5 to 8.0, and have a moisture content between 35-55 percent by weight. The material shall not contain more than 1 percent or less by weight of man-made foreign matter. Compost shall be cleaned of plastic materials larger than 2 inches in length.

#### 2.3.3.5 Worm Castings

Worm castings shall be screened from worms and food source and shall be commercially packaged.

# 2.3.4 Soil Conditioner

Soil conditioner shall be sand, super absorbent polymers, calcined clay, or gypsum for single use or in combination to meet topsoil requirements for the plant material specified.

#### 2.3.4.1 Sand

Sand shall be clean and free of toxic materials. Gradation: A minimum 95 percent by weight shall pass a No. 10 sieve and a minimum 10 percent by weight shall pass a No. 16 sieve. Greensand shall be balanced with the inclusion of trace minerals and nutrients.

# 2.3.4.2 Super Absorbent Polymers

To improve water retention in soils, super absorbent polymers shall be sized according to manufacturer's recommendations. Polymers shall be added as a soil amendment and be cross-linked polyacrylamide with an absorption capacity of 250-400 times its weight.

LTMIARIV

#### 2.3.4.3 Calcined Clay

Granular particles shall be produced from montmorillonite clay calcined to minimum temperature of 1200 degrees F. Gradation: A minimum 90 percent passing No. 8 sieve; a minimum 99 percent shall be retained on No. 60 sieve; and a maximum 2 percent shall pass a No. 100 sieve. Bulk density: A maximum 40 pounds per cubic foot.

#### 2.3.4.4 Gypsum

Gypsum shall be commercially packaged, free flowing, and a minimum 95 percent calcium sulfate by volume.

#### 2.3.4.5 Expanded Shale, Clay, or Slate (ESCS)

Rotary kiln produced ESCS material shall be in conformance with ASTM D 5883.

#### 2.4 MULCH

Mulch shall be free from weeds, mold, and other deleterious materials. Mulch materials shall be native to the region. Rotted manure is not recommended to be used as a mulch because it would encourage surface rooting of the plant material and weeds.

#### 2.4.1 Inorganic Mulch

When inorganic mulch is required for decorative purposes, it shall meet the requirements of the plans.

#### 2.4.2 Organic Mulch

Organic mulch materials shall be native to the project site and consist of recycled mulch, shredded bark, wood chips, or ground bark.

#### 2.4.2.1 Recycled Mulch

Recycled mulch may include compost, tree trimmings, or pine needles with a gradation that passes through a  $2-1/2 \times 2-1/2$  inch screen. It shall be cleaned of all sticks a minimum 1 inch in diameter and plastic materials a minimum 3 inch length. The material shall be treated to retard the growth of mold and fungi. Other recycled mulch may include peanut shells, pecan shells or coco bean shells.

#### 2.4.2.2 Shredded Bark

Locally shredded material shall be treated to retard the growth of mold and fungi.

#### 2.4.2.3 Wood Chips and Ground Bark

Locally chipped or ground material shall be treated to retard the growth of mold and fungi. Gradation: A maximum 2 inch wide by 4 inch long.

#### 2.5 NOT USED

#### 2.6 WOOD STAKING MATERIAL

Wood stakes shall be hardwood or fir; rough sawn; free from knots, rot, cross grain, or other defects that would impair their strength.

LTMIARIV

#### 2.6.1 Bracing Stake

Wood bracing stakes shall be a minimum  $2 \times 2$  inch square and a minimum 8 feet long with a point at one end. Stake shall be set without damaging rootball.

#### 2.6.2 Wood Ground Stakes

Wood ground stakes shall be a minimum of  $2 \times 2$  inch square and a minimum 3 feet long with a point at one end.

#### 2.6.3 Deadmen

Wood deadmen shall be a minimum  $4 \times 4 \times 36$  inches long.

#### 2.7 METAL STAKING AND GUYING MATERIAL

Metal shall be aluminum or steel consisting of recycled content made for holding plant material in place.

#### 2.7.1 Bracing Stakes

Metal bracing stakes shall be a minimum 1 inch diameter and a minimum 8 feet long. Stake shall be set without damaging rootball.

#### 2.7.2 Metal Ground Stakes

Metal ground stakes shall be a minimum 1/2 inch diameter and a minimum 3 feet long.

#### 2.7.3 Earth Anchor

Metal earth anchors shall be a minimum 1/2 inch diameter and a minimum 2 feet long.

#### 2.7.4 Guying Material

Metal guying material shall be a minimum 12 gauge wire. Multi-strand cable shall be woven wire. Guying material tensile strength shall conform to the size of tree to be held firmly in place.

#### 2.7.5 Turnbuckle

Metal turnbuckles shall be galvanized or cadmium-plated steel, and shall be a minimum 3 inches long with closed screw eyes on each end. Screw thread tensile strength shall conform to the size of tree to be held firmly in place.

#### 2.8 PLASTIC STAKING AND GUYING MATERIAL

Plastic shall consist of recycled plastic product made for holding plant material firmly in place. Plastic shall not be used for deadmen.

### 2.8.1 Plastic Bracing Stake

Plastic bracing stakes shall be a minimum 2 inch diameter and a minimum 8 feet long. Stake shall be set without damaging rootball.

LTMIARIV

#### 2.8.2 Plastic Ground Stakes

Plastic ground stakes shall be a minimum 1 inch diameter and a minimum 3 feet long.

#### 2.8.3 Plastic Guying Material

Plastic guying material shall be designed specifically for the purpose of firmly holding plant material in high wind velocities.

#### 2.8.4 Chafing Guard

Plastic chafing guards shall be used to protect tree trunks and branches when metal is used as guying material. The material shall be the same color throughout the project site. Length shall be a minimum 1.5 times the circumference of the plant trunk at its base.

#### 2.9 RUBBER GUYING MATERIAL

Rubber chafing guards, consisting of recycled material, shall be used to protect tree trunks and branches when metal guying material is applied. The material shall be the same color throughout the project. Length shall be a minimum 1.5 times the circumference of the plant trunk at its base.

#### 2.10 FLAG

Plastic flag material shall be used on guying material. It shall be a minimum 6 inches long. Tape color shall be consistent and visually complimentary to the entire project area. The tape color shall meet pedestrian visual safety requirements for day and night.

#### 2.11 TREE ROOT BARRIERS

Tree root barriers shall be metal or plastic consisting of recycled content. Barriers shall utilize vertical stabilizing members to encourage downward tree root growth. Barriers shall limit, by a minimum 90 percent, the occurrence of surface roots. Tree root barriers which are designed to be used as plant pit liners will be rejected.

#### 2.12 MYCORRHIZAL FUNGI INOCULUM

Mycorrhizal fungi inoculum shall be composed of multiple-fungus inoculum as recommended by the manufacturer for the plant material specified.

#### 2.13 WATER

Unless otherwise directed, water shall be the responsibility of the Contractor. Water shall not contain elements toxic to plant life.

#### 2.14 PESTICIDE

Pesticide shall be insecticide, herbicide, fungicide, nematocide, rodenticide or miticide. For the purpose of this specification a soil fumigant shall have the same requirements as a pesticide. The pesticide material shall be EPA registered and approved.

#### 2.15 POSTS AND STAKES

Posts and stakes shall be as specified herein and in section 02370A,

LTMIARIV

GEOTEXTILE AND GEOSYNTHETIC.

#### PART 3 EXECUTION

3.1 Live Material Harvesting and Preparation

#### 3.1.1 Harvesting

The source of all live cuttings shall be located within twenty-five (25) miles of the project site. The Contractor shall locate, flag, and code the live cutting sites. The Contractor shall notify the Contracting Officer seventy-two (72) hours prior to harvesting sites. Upon approval by the Contracting Officer, the Contractor shall be responsible for harvesting and transporting the cuttings to the job site. Live materials shall be installed the same day that the cuttings are harvested. If installation of live materials cannot be accomplished on the same day and storage is required, live materials shall be stored for a period no longer than two days. Any storage of live materials must be approved by the Contracting Officer prior to storing. Any costs associated with such storage are incidental to the overall costs.

#### 3.1.2 Preparation

All cuts shall be smooth and the cut surface kept small. The use of large pruning shears or power saws may be required. The live materials shall be transported to the construction site within eight (8) hours of harvesting and then cut to size, as specified herein and shown in the drawings. Live materials must be protected against drying out and overheating before and during transport and shall be covered, transported in unheated vehicles, moistened, and kept in soak pits. Live materials shall be protected on site by storing in controlled conditions, storing in shade, covering with evergreen branches or plastic, placing in moist soil, or spraying with anti-transpirant chemicals. Live materials shall receive continuous shade, shall be sheltered from the wind, and shall be continuously protected from drying by being heeled into moist soils. Where water is available, live branch cuttings shall be sprayed or immersed. Warm water (over 60 degrees Farenheit) stimulates growth and should be used only upon approval of the Contracting Officer.

#### 3.2 SITE PREPARATION

#### 3.2.1 General

Site Preparation shall be as shown on the plans.

- 3.3 EXCAVATION
- 3.3.1 General

Excavation shall be as shown on the plans.

- 3.4 INSTALLATION
- 3.4.1 General

Place 10 to 12 live branch cuttings per linear foot on the benches and parallel to the bench slope. Place the branches in a criss-cross

LTMIARIV

configuration with the growing tips of the live material oriented toward the outside of the bench. Some of the basal ends of the branches shall touch the back of the bench. Branch tips shall extend a minimum of six inches (6") beyond the edge of the bench.

#### 3.4.2 Fill

Fill shall be placedin a minimum 12" lift over each bench of the live branch cuttings and compacted to 80% - 85% proctor. Each bench shall be watered to ensure all voids are filled with soil. This process shall be repeated for each fill layer.

#### 3.4.3 Trees and Shrubs

The locations of trees and shrubs shall be as directed by the Contracting Officer.

#### 3.5 FINISHING

#### 3.5.1 General

Finishing shall be as shown on the plans.

#### 3.6 MAINTENANCE DURING PLANTING OPERATION

Installed plant material shall be maintained in a healthy growing condition as shown on the plans.

#### 3.7 APPLICATION OF PESTICIDE

Application of pesticide shall be as shown on the plans.

#### 3.8 RESTORATION AND CLEAN UP

#### 3.8.1 Restoration

Turf areas, pavements and facilities that have been damaged from the planting operation shall be restored to original condition at the Contractor's expense.

#### 3.8.2 Clean Up

Excess and waste material shall be removed from the installed area and shall be disposed offsite. Adjacent paved areas shall be cleared.

#### 3.8.3 Site Inspection

The Contracting Officer shall make a final inspection with the Contractor to ensure that all live branch layers have been installed according to the specification, plans, and details. The Contractor shall be responsible for correcting all defeciencies within (10) calendar days of the inspection. A final inspection of the corrected actions shall be performed by the Contracting Officer and the Contractor prior to final completion.

- 3.9 Not Used
- 3.9.1 Not Used
  - -- End of Section --

# United States Department of the Interior

National Park Service

Midwest Region 601 Riverfront Drive Omaha, Nebraska 68102-4226



L7617(MWR-PL/C)

October 19, 2004

Ms. Sonya L. Suggs
U.S. Army Corps of Engineers
Louisville District
P.O. Box 59
Louisville, Kentucky 40201-0059

Dear Ms. Suggs:

On behalf of the Secretary of the Interior, please find enclosed our preliminary determination under section 7(a) of the Wild and Scenic Rivers Act (Act) (Public Law 90-542, as amended) concerning the proposal by the U.S. Army Corps of Engineers (Corps) to stabilize approximately 1,400 feet of the left river bank (facing downstream) on the Little Miami National Scenic River (LMR), at river mile 8.7, in Hamilton County, Ohio.

The project would entail using a combination of longitudinal fill stone protection (rock rip-rap), live siltation, brush layering, live staking, and bendway weirs, to stabilize portions of the left bank that is subject to erosion. The project is designed to prevent loss of archeological resources and ancillary park improvements.

Although the engineering design solution proposed by your office is functional and would serve to stabilize the bank, the proposal is not compatible with the purpose and intent of the Act. It is our preliminary Section 7(a) determination that the project would have a direct and adverse effect on the free-flowing condition and to the scenic and recreational outstandingly remarkable values (ORVs) of the Little Miami National Scenic River; per the provisions of the Act, this project as described may not proceed.

The National Park Service (NPS) shares your concerns that adverse impacts to the Perin Village archeological site will continue, and portions of the site could be lost without an acceptable long-term solution to protect or recover the site. The Perin Village site is eligible for listing on the National Register of Historic Places, for which the NPS has oversight responsibility. The Perin Village site represents an ORV which the State of Ohio, as the river-administering agency, is required to preserve and enhance. We believe part of the solution includes understanding the cause of erosion, including the upstream influences on the site, and could assist in developing an acceptable long-term solution. For example, redesigning runoff areas upstream could lessen or stop riverbank erosion at this site.



·		

We note the LMR recommended river plan (Department of the Interior (DOI) 1973) anticipated erosion problems associated with loss of riparian vegetation and recommended restrictions on the allowable extent of tree and vegetation removal. The report recommended that "efforts should be made to encourage local units of government to apply zoning controls of lands adjacent to the river, particularly in the floodplains and nearby developed areas to insure that the quality environment is protected by a buffer zone."

2

To put the project into further context, we note the loss of the riparian corridor upstream and at the site has contributed significantly to the problem, and continues to exacerbate natural forces of erosion. The eroding river bank is a problem that has persisted for over a decade. Throughout this period, the Ohio Department of Natural Resources (ODNR) continually provided recommendations to the Anderson Park District to address the loss of riparian vegetation at the site. More recently, the ODNR developed a Forest Corridor Reforestation Management Plan, which was submitted to the Corp in a June 26, 2001, as part of a set of approval conditions associated with a Corp permit notice for work at the Anderson site, including removal of the park maintenance building from the riverbank. Clearly, without vegetative buffers, and other complementary controls, unplanned developments will continue to exacerbate erosion up and down the Little Miami River.

#### Recommendation:

We would like to encourage continued dialogue with the State of Ohio (ODNR, Ohio Historic Preservation Office), and other appropriate agencies to assist the Anderson Park District (APD) in exploring alternatives that are compatible with the Act, as well as the management goals for both LMR and Riverside Park:

- Relocation of the APD building (per conditions of a previous 404 permit), and the septic mound away from the riverbank. Ideally, the septic mound should be relocated out of the 100-year floodplain.
- Data recovery. While preservation in situ may not be feasible, portions of
  the site may be documented and recovered. In many instances, data
  recovery of properties listed on or eligible for listing on the National
  Register of Historic Places is an acceptable mitigation measure when in
  situ preservation is not feasible.
- Installation of interpretive exhibits explaining the significance of the Perin Village site, the LMR, and the reasoning for selecting the current course of action.
- Completion of a hydrological study of the river in this area. The study should fully evaluate factors accelerating erosion at, and upstream of the site, model changes in natural flows (mean monthly) associated with streambank armoring, weirs, and other standard methods of stabilizations, (including no-action), and evaluate impacts to LMR resources. In the interim, revegetating portions of the streambank with live saplings and other plantings, cultivate and monitor to ensure success, would serve to slow erosion.

• Develop a long-term Comprehensive River Management Plan for the LMR that identifies management actions for the next 15-20 years and involves State, county, local, and private organizations.

3

To reiterate, I share your concern in seeking viable long-term solutions that protect the valuable resources of the Little Miami River. I would like to offer planning and technical assistance through my staff to assist the project sponsors in resolving this problem. Please contact Mr. Marty Sterkel, Chief of Partnerships, Midwest Regional Office, for technical assistance, including facilitation of stakeholder meetings, researching funding sources, and providing assistance related to implementation of the recommendations above. Mr. Sterkel may be reached at (402) 661-1536.

Sincerely,

Ernest Quintana Regional Director

Enclosure

cc

Mr. Bob Gable
Ohio Department of Natural Resources
Scenic River Services Group
Division of Natural Areas & Preserves
1889 Fountain Square Ct., Bldg. F-1
Columbus, Ohio 43224

Mr. Jerry Ballard
Assistant Regional Scenic River Manager
Ohio Department of Natural Resources
Division of Natural Areas & Preserves
Ohio Department of Natural Resources
5349 Wilmington Road
Oregonia, Ohio 45504-9704

Mr. David Snyder Archaeology Reviews Manager Ohio Historic Preservation Office Ohio Historical Society 567 E. Hudson Street Columbus, Ohio 43211-1030



Mr. Eric Partee
Executive Director
Little Miami River, Incorporated
6040 Price Road
Milford, Ohio 45150-1429

Ms. Mary M. Knapp, Ph.D U.S. Fish and Wildlife Service Ecological Services 6950 American Parkway Suite H Reynoldsburg, Ohio 43068

Mr. Marty Sterkel
National Park Service
Midwest Region
Assistant Regional Director, Partnerships
601 Riverfront Drive
Omaha, Nebraska 68102



10245 Winton Road • Cincinnati, Ohio 45231 (513) 521-PARK (7275) • www.greatparks.org

Board of Park Commissioners:

NANCY R. HAMANT \* ROBERT A. GOERING \* JAMES E. BUSHMAN

Director JACK SUTTON

Your Natural Choice®

July 6, 2006

Ms. Molly McClure Executive Director Anderson Park District 8249 Clough Pike Cincinnati, OH 45244

RE: Clean Ohio Conservation Program Application

Dear Molly:

I am writing in support of Anderson Park District's application for funding through the Clean Ohio Conservation Program for the proposed stream bank restoration project at Riverside Park on the Little Miami State and National Scenic River.

The proposed project is important to the Hamilton County Park District and the citizens of the region for several reasons. The Hamilton County Park District owns and manages property directly across the river and downstream from Riverside Park. The Hamilton County Park District has just completed work on an extension of the Little Miami Scenic Trail at Avoca Park, opposite Riverside Park. As part of this project, the Ohio Department of Natural Resources required a corridor management plan be prepared and implemented by the Hamilton County Park District. A major portion of the plan involves protecting riparian vegetation that filters storm water runoff and reduces sedimentation in the river. The erosion at Riverside Park is modifying the flow of the river, resulting in erosion at Avoca Park. This impacts our ability to meet the goals for protecting the river corridor. The erosion occurring at Riverside Park is also depositing silt downstream, impacting water quality and recreation activities that occur on the river, particularly the canoe and fishing area located at Bass Island along Newtown Road. We are supportive of your project because it will help preserve the assets of the Hamilton County Park District and improve the recreation experience for the citizens of the region.

Because of the importance of your project to the Hamilton County Park District, we are willing to provide technical support as part of your proposed project. To complement the corridor management plan which we have already implemented on the other side of the river, we are prepared to assist the Anderson Park District in completion of a management plan for the riparian areas within Riverside Park. This plan will help ensure the long term success of the restoration work funded through the Clean Ohio Conservation Program.

Ms. Molly McClure July 6, 2006 Page 2

Your project is a another opportunity for our agencies to partner in order to provide more effective management of our natural resources, and our efforts will enhance recreation services for the citizens of the region. Once again, the Hamilton County Park District is supportive of your application for Clean Ohio funding at Riverside Park and is willing to assist through technical support in preparation of a riparian area management plan.

tosst ame

ROSS HAMRE, Planning Director HAMILTON COUNTY PARK DISTRICT

cc: Mr. Jack Sutton, Director, HCPD

# Little Miami River Corridor Management Plan

LMR Bridge / Trail Project (PID # 24033) To Kroger Hills

Submitted: February 2002 Re-submitted: June 14, 2002 Approved: June 24, 2002

Hamilton County Park District

# Little Miami River Corridor Natural Resource Management Plan Newtown Road to Kroger Hills February 2002

#### **Introduction**

As indicated in an agreement between the Hamilton County Park District and The Ohio Department of Natural Resources, and as described in a Memorandum of Understanding dated 5/24/01(See Attachment 5), the Hamilton County Park District has prepared this Natural Resource Management Plan. The plan applies to 300± acres of land owned or leased by the Park District along the Little Miami River from Newtown Road to, and including, Kroger Hills (See Attachment 1). The Hamilton County Park District and the Ohio Department of Natural Resources will review the plan every 5 years to allow for appropriate modifications.

Implementation of this Natural Resource Management Plan will ensure the riparian corridor shall remain essentially undeveloped in order to protect the natural aquatic and terrestrial habitat in and adjacent to the Little Miami River. The plan has the following components:

- Best Management Practices recommended by Hamilton County Park District;
- Map of existing vegetative cover types (Attachment 2);
- Existing & proposed improvements (Attachments 3 & 4);
- Recommended annual management activities for maintaining the existing and proposed improvements and the existing and restored natural areas.

#### Goals

This corridor of land adjacent to the Little Miami River will be managed to preserve & enhance the integrity of this State and National Scenic River with the following goals in mind:

- Restore natural areas to preserve & protect biodiversity
- · Provide appropriate recreational opportunities within the corridor
- Provide a safe and clean environment for park visitors

#### **Objectives**

- The existing wooded corridor will be expanded. A natural forested riparian corridor will be managed 120' (minimum) outward from the ordinary high watermark (OHW) of the Little Miami River.
- 2. Wetlands and prairies will be established in the floodplain where feasible. Wetlands will be restored where hydric soils exist through excavation of shallow pools, removal of existing drain tile, construction of berms or a combination of more than one of these techniques.
- 3. A wetland/prairie mosaic of sixty acres or more will be established where open land already exists. The inclusion of wetlands into the prairie will create a habitat that is much more productive for wildlife. The widest diversity of native prairie and wetland plant species will be used when seeding the initial restored area.
- 4. The maintenance of all habitats will include the control of exotic plant species.

#### **Best Management Practices**

The Hamilton County Park District has established the following list of Best Management Practices to provide the maximum appropriate protection to the Little Miami River, or other riparian areas within the Park District

The single-most important Best Management Practice (BMP) for the protection of river resources is establishment and maintenance of a riparian buffer. This buffer should be characterized by native vegetation. The width of the buffer depends on the management goal.

- For protection of water quality, a minimum buffer width of 40 to 80 feet (dependent on slope) on both sides of the stream is recommended.
- To protect aesthetic / scenic values, the buffer should be extended to a minimum of 100 feet on both sides of the stream with the first 40 feet remaining undisturbed.
- To conserve and enhance wildlife, a vegetated buffer measuring at least 100 to 300 feet from the ordinary high water mark is recommended. The wider the buffer, the greater the benefits for wildlife. Ideally, the buffer should include the natural floodplain and adjacent bluff.

In addition, the following specific BMPs are recommended:

- Paved trails should be kept 40 feet minimum from the river.
- Runoff from parking lots should be filtered before entering the river.
- The handling and disposal of chemicals such as pesticides should be avoided within 120 feet of the river and its tributaries.
- Openings or thinning in the buffer to allow for a view of particular features or scenes should be established by selectively thinning underbrush, shrubs and low-hanging limbs. Cutting and felling trees should be avoided when attempting to create views.
- New structures, buildings and developments should be set back at least 120 feet from the riverbank.
- The exterior design and height of buildings and other structures should be compatible with and unobtrusive to the scenic, natural and cultural qualities of the river corridor.
- Signage should be used only when necessary for the safety and welfare of visitors and for awareness and protection of natural, historical or cultural features of the corridor. Signs should be designed to be unobtrusive and blend with the surroundings.
- Fences or barriers should not visually obstruct natural or aesthetic features.
- Docks and landings should be designed to be compatible with and unobtrusive to the scenic, natural and cultural qualities of the river corridor.
- Restore the scenic quality of over-utilized and abused areas in the scenic river corridor by landscaping and re-vegetating eroded and abused areas, planting additional wooded buffer in

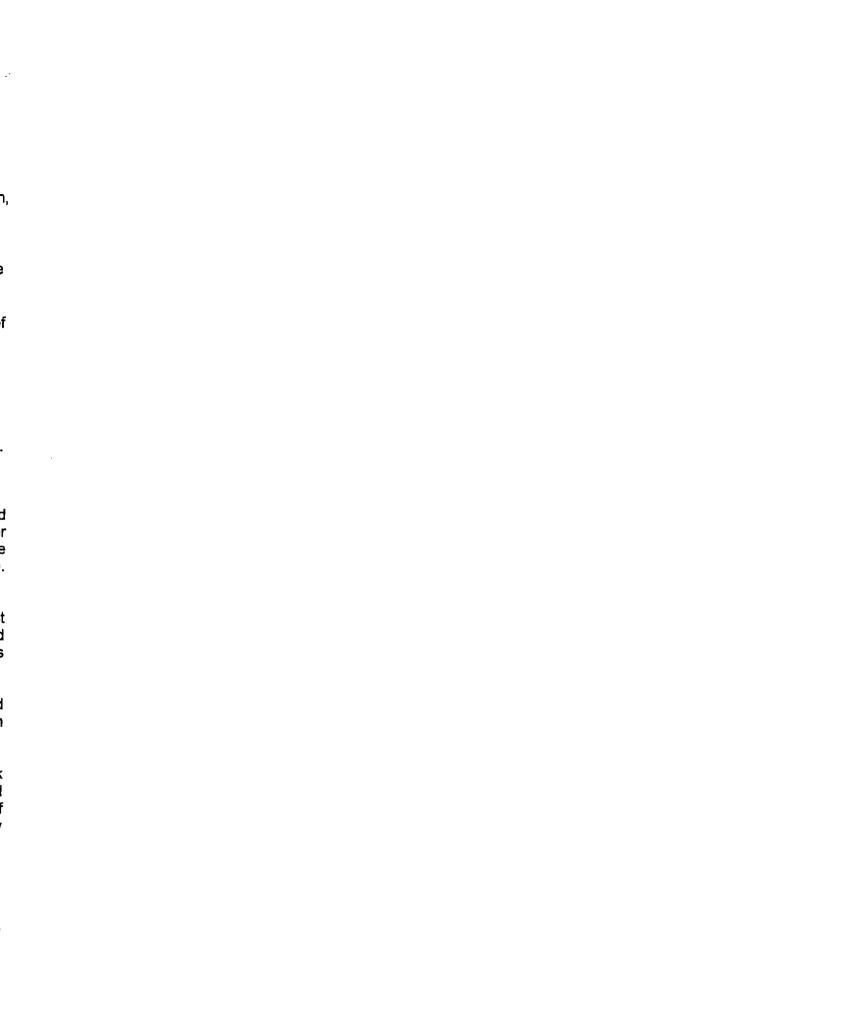
areas where the buffer is thin, and by controlling access and specific uses that cause

- Uplands adjacent to riparian habitats should be managed in a manner that sustains riparian habitat values.
- Maintain an understory of native herbaceous and shrub plants, a multi-layered tree canopy, diverse tree sizes, standing dead snags and fallen trees.
- Restore de-vegetated and degraded areas by reestablishing the naturally occurring vegetation, particularly where restoration can enhance connectivity between adjacent riparian habitats.
- Maintain large, contiguous blocks of natural habitats and avoid habitat fragmentation. Enhance the connections between existing natural habitat blocks, particularly to those that are isolated, by establishing forest stands or habitat corridors.
- Reforest idle or marginal agricultural lands through natural regeneration or planting a variety of native species.
- Fences or barriers, which create a hindrance to the movement of wildlife, should not be constructed in the riparian corridor.
- The use of recreational vehicles in scenic river corridors should be prohibited to avoid degradation caused by the destruction of vegetation, erosion of soil and disturbance of wildlife.

## Specific Recommendations for Avoca Park (See Attachment 3)

- I. At Avoca Park, successional bottomland hardwood trees are already growing in the former field areas (A on Attachment 3) closest to the river. No tree planting is needed in these areas, however exotic plants such as bush and Japanese Honeysuckle should be controlled annually until the area matures. Maturing bottomland forest exists in the majority of Avoca (B on Attachment 3). Exotic plants need to be controlled annually to promote biodiversity beginning in 2003.
- II. Successional brushland edges should be maintained around the northeast, east and southeast sides of play field (C on Attachment 3) at Avoca. In this 30' wide edge, bush honeysuckle should be controlled and replaced with native shrubs. Exotic control 2002-2007. Plant native shrubs 2008.
- III. The potential for creating a large vernal pool (D on Attachment 3) in the swale that crosses the old driveway should be explored. If successful at holding water, this would offer ideal amphibian breeding and waterfowl habitat. This should be accomplished in 2004.
- IV. Following the construction of a sanitary sewer main by the Metropolitan Sewer District, the Park District, pending the availability of funding, will extend a multi-purpose trail from Newtown Road upstream to Avoca Park. Native plant species will be used to restore the site up to within 6 feet of the proposed bike trail. A staging area is also planned, including a parking area, restroom, play field, picnic shelters, landscaping, & entry signage. Anticipated construction in 2005.

3



- V. Maintenance of the recreation facilities will include keeping the multi-purpose trail clean & clear of debris, regular mowing of the trail berm & play field, cleaning of restroom & shelters, and general repair & maintenance of the facilities.
- VI. Regularly scheduled patrol by the Hamilton County Park District rangers.

# Specific Recommendations for Kroger Hills (See Attachment 4)

- I. At Kroger Hills, a 70-acre prairie will be created within the existing field. The prairie will be divided into four parts by mowed firebreaks. When connected, the mowed perimeter firebreaks could also become a series of walking trails. The prairie would consist of areas A, B, C & D (Attachment 4). Small 2-acre prairies have already been planted in sections B, C & D (Attachment 4). Larger trees scattered throughout the existing grassland should be removed with the exception of a couple of sentinel trees. Expanding these plantings will begin in 2002 and be completed in 2006.
- II. Two small 1-2 acre vernal pools may also be restored in sections B & D (Attachment 4) by removing drainage tile and damming drainage swales. Larger trees scattered throughout the existing grassland should be removed with the exception of a couple of sentinel trees. This work would be accomplished in 2002 prior to the prairie restoration work.
- III. Area E (Attachment 4) will be maintained as an early successional wooded area by controlling bush honeysuckle and maintained by removing trees over 6" dbh beginning in 2004. The eastern half of area E (Attachment 4) will be allowed to mature into bottomland forest.
- IV. Area F (Attachment 4) will be maintained as a brushland. Bush honeysuckle will need to be controlled annually beginning in 2002 and the area mowed every third or fourth year to control tree growth. Planting of native shrub species will take place in 2005 to compete with invading exotics.
- V. Both former kudzu sites will be monitored annually until 2003 then every three years to prevent regrowth of this exotic plant.
- VI. A vernal pool at the north end of the property is the result of years of illegal dumping in a sinkhole.

  The resulting clogged sinkhole now offers ideal amphibian breeding habitat and should be maintained as such. Encroachments need to be monitored annually to prevent additional dumping and degradation of water quality.
- VII. The northern-most portion of Kroger Hills (G on Attachment 4) has been ranked as some of the most mature and highest quality woodland habitat in the entire Park District by contractual researchers. Exotic plants such as bush honeysuckle and garlic mustard threaten much of this woods and will be controlled annually beginning in 2003.
- VIII. Remove barn but leave concrete slab for installation of wildlife viewing platform. The barn will be razed by 2005. A wildlife-viewing platform will be installed after restoration is completed in 2006. The floor of the platform should be at least 8' above existing grade to offer a panoramic view over the tall grass prairie plants.
- IX. The riparian corridor at Kroger Hills (H on Attachment 4) is maturing bottomland forest. Exotic plants should be controlled to allow understory vegetation to thrive. Exotics should be controlled annually beginning in 2003.
- X. Regularly scheduled patrol by the Hamilton County Park District ranger.

### Qualifications / Experience of Staff Responsible for Implementing the Plan

To accomplish this plan, the Park District will rely primarily on it's Land Management Department and Operations Department augmented with assistance from the Park District's Projects Crew, Resource Quality Department, and outside contractors.

The Land Management Department has more than 18 years of prairie restoration and exotic plant control experience, and 11 years of wetland restoration experience.

Four of the six Land Management personnel have a combined total of 57 years of experience in Natural Areas Management.

### **Annual Management Activity Schedules**

Using Best Management Practices, specific recommendations have been developed for management of the corridor.

5



Little Miami River Corridor Recommended 2002 Management Activities

	Spring 2002	Summer 2002		
AVOCA PARK	1001	Summer 2002	Fall 2002	Winter 2002
Control exotic plants:				
i. Continue acute plants;				
No planting needed.				
<ol> <li>Control exotic plants;</li> </ol>				
Plant native shrubs.				Exotic plant control in
III. Construct vernal				edge.
pool.				-
IV. Construct trunk		Start construction of trush	13-11-11-11-11-11-11-11-11-11-11-11-11-1	
sewer main (MSD).		sewer main (MSD)	Construction of Irunk	Construction of trunk
V. Construct multi-		(MOM)	sewer friam (MSD)	sewer main (MSD)
purpose trail				
VI. Construct other				
recreation facilities.				
VII. Maintenance of				
recreation facilities				
KROGER HILLS				第二条 かいこう いっこう
I. Remove large trees:		Mous & opens field A	C	
Plant native prairie.		A Diell (spide & More)	opray field A	
II. Construct vernal			1 1	
pools.			vernal pool restoration &	
III. Remove large trees;			nge lenloval	
Control exotic plants.				
IV. Control trees &				
exotic plants; Plant			Dush noneysuckie control	
native shrubs.				
V. Monitor Kudzu Vine;		Monitor Kudzu eites		
Control, if necessary.				
VI. Monitor				
encroachments & illegal				Monitor encroachments
dumping.				
VII. Control exotic				
plants.				
VIII. Remove structure &				
trees; Construct wildlife				
viewing platform.				
IX. Control exotic plants.				

9

Little Mlami River Corridor Recommended 2003 Management Activities

AVOCA PARK			I all 2003	Winter 2003
I. Control exotic plants;			Exotic plant control	
Control exotic plants:				
Plant native shrubs.			Exotic plant control in edge	***************************************
III. Construct vernal				, minimum.
pool.				
IV. Construct trunk sewer main (MSD).	Construction of trunk	Trunk sewer main		
V. Construct multi-	(COM) THOUSE COMES	constituction completed		777
purpose trail			Start construction of multi-	Construction of multi-
VI. Construct other			purpose trail	purpose trail
recreation facilities.				
VII. Maintenance of				
recreation facilities				
KROGER HILLS			manufic the sum of the	e en
l. Remove large trees;	Spray field A	Mow & spray field A: Mow	Spray & plant field A	a Assessment of the Control of the C
Flant native prairie.		& spray field B	Spray field B	
II. Construct vernaf pools.				
III. Remove large trees:				1,000,000,000,000,000,000,000,000,000,0
Control exotic plants.				
IV. Control trees &				
exotic plants; Plant				Bush honeysuckle control
native shrubs.		-		
V. Monitor Kudzu Vine;		Monitor Kudzu sites		19 10 10 10 10 10 10 10 10 10 10 10 10 10
Control, if necessary.				
VI. Monitor				
encroachments & illegal				Wonitor Encroachments
dumping.				
VII. Control exotic			Evotio plant control	
plants.			רייסוור ליושונו כסווווסו	Exetic plant control
VIII. Remove structure &				
frees; Construct wildlife				
viewing platform.			,t.	
IX. Control exotic plants.				

Complete restoration of trail corridor Winter 2004 Plant native trees & shrubs to restore trail corridor Create large vernal pool Exotic plant control Exotic plant control Little Miami River Corridor
Recommended 2004 Management Activities
Summer 2004 Explore site for vernal pool Multi-purpose trail construction complete Construction of multi-purpose trail Spring 2004 I. Control exotic plants;
No planting needed.
II. Control exotic plants;
Plant native shrubs.
III. Construct vernal pool.
IV. Construct trunk sewer main (MSD).
V. Construct multipurpose trail
VI. Construct other recreation facilities.
VII. Maintenance of recreation facilities

Control exotics & remove trees >6" DBH Bush Honeysuckle control Monitor encroachments Exotic plant control Control exotics Spray & plant field B; Spray field C Exotic plant control Mow field A; Mow & spray field B; Mow & spray field C; Mow field D Mow brushland Spray field B pools.

III. Remove large trees;
Control exotic plants.
IV. Control trees & exotic plants; Plant native shrubs.
V. Monitor Kudzu Vine;
Control, if necessary.
VI. Monitor encroachments & illegal dumping.
VIII. Exotic plant control.
VIII. Remove structure & trees; Construct wildlife viewing platform.
IX. Exotic plant control. KROGER HILLS

I. Remove large trees;
Plant native prairie. II. Construct vernal

 $\infty$ 

Little Mami River Corridor Recommended 2005 Management Activities

	Spring 2005	Simmor 2006		
AVOCA PARK		COLUMN TO THE PARTY OF THE PART	Fall 2005	Winter 2005
<ol> <li>Control exotic plants;</li> <li>No planting needed.</li> </ol>			Exotic plant control	
II. Control exotic plants; Plant native shrubs.			Exotic plant control	44.47
III. Construct vernal pool.				
IV. Construct trunk sewer main (MSD).				
V. Construct multi- purpose trail			•	
VI. Construct other recreation facilities.	Start construction of recreation facilities		Seed & fertilize ball field	
VII. Maintenance of recreation facilities				2
KROGER HILLS				The second section of the section of the second section of the section of the second section of the secti
I. Remove large trees; Plant native prairie.	Spray field C	Mow field B; Mow & spray field C; Mow & spray field D	Burn field A; Spray & plant field C; Spray field D	
II. Construct vernal pools.				
III. Remove large trees; Control exotic plants.				Control exotics
<ul><li>IV. Control trees &amp; exotic plants; Plant native shrubs.</li></ul>		Mow brushland	Plant native shrubs; Spray Honeysuckle	
V. Monitor Kudzu Vine; Control, if necessary.				
encroachments & illegal dumping.				Monitor encroachments
VII. Exotic plant control.			Exotic plant control	Evotic plant control
Vill. Remove structure; Construct wildlife Viewing platform.		Raze barn		משונה ביות ביות ביות ביות ביות ביות ביות ביות
IX. Exotic plant control,			Control exotics	

Little Miami River Corridor Recommended 2006 Management Activities

	Coring 2006	Necollinelided 2006 Management Activities		
AVOCA PARK	Spring 2000	Summer 2006	Fall 2006	Winter 2006
Control ocotion plants:				
No planting needed.			Exotic plant control	
II. Control exotic plants;			Evotio plont control	
Plant native shrubs.			Exulic plant control	
III. Construct vernal				
pool.				
IV. Construct trunk				
sewer main (MSD).	_			
V. Construct multi-				
purpose trail				
VI. Construct other				
recreation facilities.				
VII. Maintenance of	Mow turf areas weekly;	Mow turf areas weekly;	Mow furf areas weekly:	Winterize restracm
recreation facilities	Clean restroom & remove	Clean restroom & remove	Clean restroom & remove	
	trash dally; Maintain trail; Fertilize play field	trash daily; Maintain trail	trash daily; Maintain trail;	
The second secon	i ci ilike piay lielu		Fertilize play field	
KROGER HILLS				
I. Remove large trage:	Spray field D			
Plant native prairie.	Opiay neta D	Now Teld C; Mow & spray field D	Burn field B; Spray & plant	
II. Construct vernal				
pools.				
III. Remove large trees;				
Control exotic plants.				Control exotics
IV. Control trees &			Sprov Honororella	
exotic plants; Plant			Spidy noileysuckie	
native shrubs.				
V. Monitor Kudzu Vine;			Monitor Ludan	
Control, if necessary.			ואיסויינסו צחמקח	
VI. Monitor				
encroachments & illegal	-			Monitor encroachments
dumping.	ï			
VII. Exotic plant control.			Snrav exotics	
VIII. Remove structure &		Install viewing nlafform	ביות בייתונים	
frees; Construct wildlife				
viewing platform.		ĺ		
IX. Exotic plant control.			Control exotics	

0

## Plant Material for Restorations

As much variety of plant material as possible will be acquired for restoration using the following lists. Additional prairie and wetland species will be provided by the Park District's Shaker Trace Seed Nursery to supplement the biodiversity of herbaceous plants.

Prunus americana

# Woodland Edges / Bike Trail Corridor

 Alternate-Leaf Dogwood Comus altemifolia American Basswood Tilia americana Black-Haw Viburnum prunifolium Black Walnut Juglans nigra Flowering Dogwood Comus florida Grey Dogwood Comus racemosa Hawthorn Crataegus sp. Hazeinut Corylus americana Juneberry Amelanchier arborea Maple-Leaf Viburnum Vibumum acerifolium Ninebark Physocarpus opulifolius Northern Arrowwood Viburnum detatum Ohio Buckeve Aesculus glabra Pin Oak Quercus palustris Red-Twig Dogwood Cornus stolonifera Red Maple Acer rubrum Redbud Cercis canadensis Silky Dogwood Cornus ammomum Sour Gum Nyssa sylvatica Spicebush Lindera benzoin Swamp White Oak Quercus bicolor Sweet Gum Liquidamber styraciflua Sycamore Platanus occidentalis Wahoo Euonymus atropurpureus White Ash Fraxinus americana • Wild Plum

#### **Prairies**

Carolina Rose Rosa Carolina Dense Blazing-Star Liatris spicata Foxglove Beard-tongue Penstemon digitalis Fragrant Sumac Rhus aromatica New England Aster Aster novae-angliae Obedient Plant Physostegia virginiana Ohio SpiderwortPrairie Blazing-Star

Prairie False Indigo

• Prairie Rose

Purple Bergamot
 Purple Capations

Purple Coneflower

Royal Catchfly

Sweet-Joe-Pye-Weed

• Tall Coreposis

Wild Sweet-William

Tradescantia ohiensis Liatris pycnostachya Baptisia leucantha

Rosa setigera

Mondarda fistulosa

Echinecea purpurea

Silene regia

Eupatorium purpureum

Coreopsis tripteris

Phlox maculata

### Wet Areas / Vernal Pools

Buttonbush

Cardinal Flower

Great Blue Lobelia

Joe-Pye-Weed

Prickly-Ash

Swamp Milkweed

Turtlehead

Wild Blue Iris

Cephalanthus occidentalis

Lobelia cardinalis

Lobelia siphilitica

Eupatorium dubium

Xanthoxylum americanum

Asclepias incamata

Chelone glabra

Iris brevicaulis



# Ohio Department of Natural Resources

BOB TAFT, GOVERNOR

SAMUEL W. SPECK, DIRECTOF

Division of Natural Areas & Preserves
Tom Linkous, Chief
2045 Morse Rd., Bldg. F-1
Columbus, OH 43229-6693
Phone: (614) 265-6453 Fax: (614) 267-3096

June 26, 2006

Nancy Seger
Oxbow River & Stream Restoration
2905 Klondike Rd.
Delaware, OH 43015

Dear Ms. Seger:

After reviewing our Natural Heritage maps and files, I find the Division of Natural Areas and Preserves has records of rare or endangered species within the area outlined on the map of the Oxbow River & Stream Restoration, Inc. Riverside Park Stream Bank Stabilization project. The site is located 0.5 mi. NE. of the junction of Edwards Rd. and Round Bottom Rd., Anderson Twp., Hamilton Co., Madeira Quadrangle. *Anodonta suborbiculata*, Flat Floater, has an Ohio Status of Special Concern. *Noturus eleutherus*, Mountain Madtom, is Endangered in Ohio. *Obliquaria reflexa*, Threehorn Wartyback, is Threatened in Ohio. *Truncilla donaciformis*, Fawnsfoot, is Threatened in Ohio. *Truncilla truncata*, Deertoe, has an Ohio Status of Special Concern. The map I have included with this letter displays the locations of these records. Becky Jenkins of the Division of Wildlife should be contacted regarding possible impacts to rare animal species. She can be reached at (614) 265-6631.

There are no existing or proposed state nature preserves at the project site. We are also unaware of any unique ecological sites, geologic features, breeding or non-breeding animal concentrations, state parks, state nature preserves, state forests, or wildlife areas within the project area. However the site is on the Little Miami State Scenic River. John Wolary, Scenic River Coordinator, should be contacted regarding possible impacts to the river. He can be reached at (513) 934-0751. The site is also near the Avoca Park. The Hamilton County Park District should be contacted regarding possible impacts to the park. They can be reached at (513) 521-7275. The red line on the map represents the approximate boundary of the park.

1

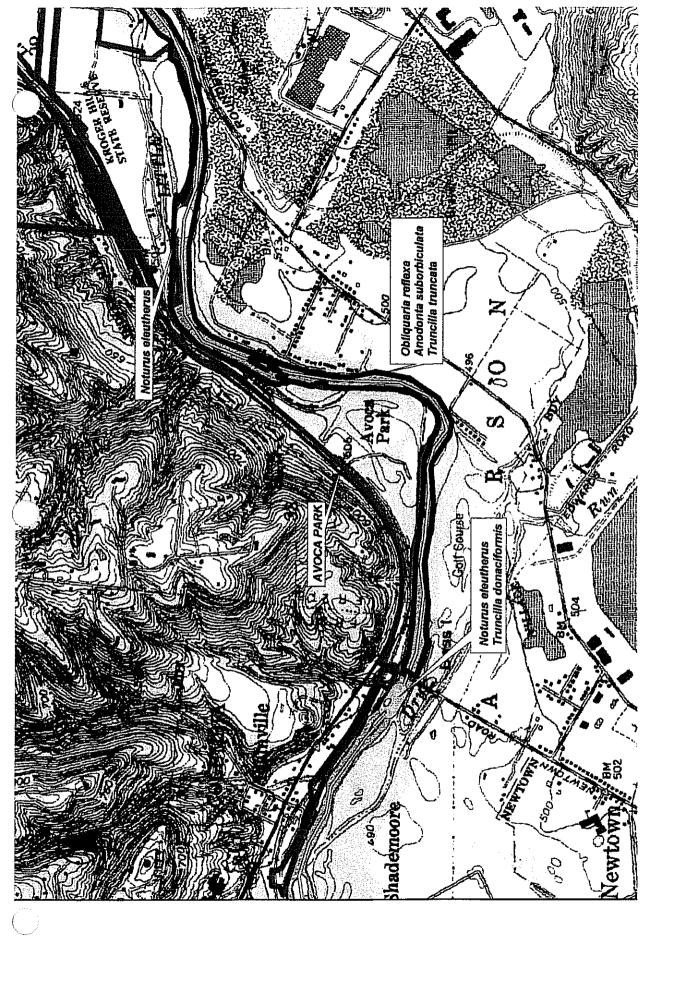
June 26, 2006 Nancy Seger Page 2

Our inventory program has not completely surveyed Ohio and relies on information supplied by many individuals and organizations. Therefore, a lack of records for any particular area is not a statement that rare species or unique features are absent from that area. Although we inventory all types of plant communities, we only maintain records on the highest quality areas. For National wetlands Inventory maps, please contact Madge Fitak in the Division of Geological Survey at (614) 265-6576. Aerial photos may be obtained from ODOT at (614) 275-1369. USGS maps can be requested directly from the U.S. Geological Survey at 1-888-275-8747.

Please contact me at (614) 265-6409 if I can be of further assistance.

Sincerely,

Butch Grieszmer, Data Specialist Resource Services Group





Molly McClure Executive Director Anderson Park District 8249 Clough Pike Cincinnati Ohio 45244

Dear Molly,

Thank you for taking the lead in applying for the funding to design and implement a plan to resolve the erosion of the South bank of the Little Miami River at the far easterly end of our property where our property abuts your property.

We recognize that it is in the best interests of all involved to see the river bank restored to a natural looking slope and habitat that will withstand the flooding of the river and stop the erosion that is both unsightly, unsafe and creating negative ecological issues.

We are not in the position to offer funding, but if the plans when reviewed by us are found to be in keeping with the beauty of the river and allow for some access to the river from our property, and the cessation of erosion, we are prepared to fully cooperate.

We are willing to grant you the right for a temporary construction easement of our property beginning January 1, 2007 (We currently have the property leased). You had mentioned in our meeting that this would be necessary in order to gain the access to the damaged area of the river. This would also include our permission for you to have maintenance access on our property. We will favorably consider the as yet to be written terms of the proposed corridor management plan, which affects our section of the riverbank. We understand that if you are awarded the Clean Ohio Grant, the Ohio Public Works Commission will require a "Deed Restriction" for the area of restoration on your property and our property. We also understand that the "Deed Restrictions" will not limit our future access and enjoyment of our property.

Please keep us advised of the progress in seeking funding to create a plan and implement a plan to restore the river bank along your property and the approximately 300 feet of our property that has erosion issues along the river.

Sincerely,

John Kirby

Director of Operations

Horizon Community Church

# AUTHORIZATION BY THE GOVERNING BODY OF THE APPLICANT

Molly McClure, Anderson Park District Executive Director, is hereby authorized to apply to the OPWC for Clean Ohio Conservation Program funds.

Molly McClure, Anderson Park District Executive Director, and Biz Martella, Anderson Park District Business Director, are further authorized to enter into any agreements as may be necessary and appropriate for obtaining this financial assistance.

6 129,06

Mark C. Bissinger

President

ANDERSON PARK DISTRICT

BOARD OF PARK COMMISSIONERS



# CHIEF FINANCIAL OFFICER CERTIFICATION OF LOCAL FUNDS

8/9/06

I, Business Director of the Anderson Park District, hereby certify that the Anderson Park District has the amount of **\$220,911** in the **General Fund** and that this amount will be used to pay the applicant revenues immediately for the Little Miami Scenic River Riparian Corridor Restoration at Riverside Park when it is required.

Bailey H. Martella Anderson Park District

. .

Business Director/Board Clerk



Revised August 9, 2006

Riverside Park Stream Bank Stabilization Anderson Park District Cincinnati, Ohio

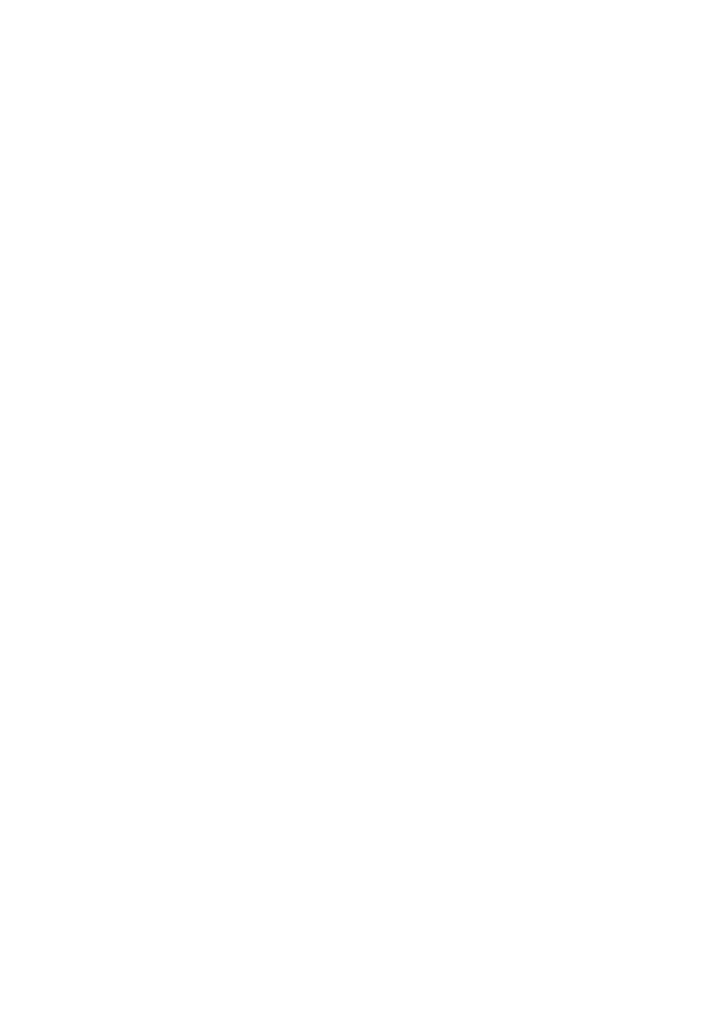
## Preliminary Engineer's Estimate

<u>Item No.</u>	Description	Quantity	<u>Unit</u>	<u>Unit</u>	Total Cost
				<u>Cost</u>	
1	Mobilization	. <b>1</b>	LS	\$ 10,000	\$ 10,000
2	Clearing &	1	LS	\$ 3,000	\$ 3,000
	Grubbing				. ,
3	Type B Rock	5,352	Tons	\$ 30	\$ 160,560
4	Native	1,070	Tons	\$ 40	\$ 42,800
	Substrate				
5	Earthwork	7,305	CY	\$ 12	\$ 87,660
6	Erosion Fabric	3,545	SY	\$ 7	\$ 24,815
7	Topsoil	1,182	Tons	\$ 30	\$ 35,460
8	Final Grading	1	LS	\$ 40,000	\$ 40,000
9	Seed & Mulch	0.7	Acre	\$ 5,000	\$ 3,500
10	Trees	60	2" caliper	\$ 180	\$ 10,800
11	Shrubs	3,000	Bare root	\$ 5	\$ 15,000
12	Shrubs	300	Container	\$ 24	\$ 7,200
13	Storm Sewer	1	LS	\$ 5,000	\$ 5,000
-	Rehab				
Subtotal					\$ 445,795
Contingency		10	%		\$ 44,579
TOTAL					\$ 490,374

oxbow RIVER & STREAM RESTORATION, INC.
natural channel design, bio-engineering, stream management
2905 Klondike Road, Delaware, Ohio, 43015 ph 740-362-4134 fax740-362-4234

www.oxbowriver.com

Contents of this proposal are confidential and proprietary information owned solely by Oxbow River & Stream Restoration, Inc. and shall not be used, copied or reproduced without the express written permission from Oxbow River & Stream Restoration, Inc.



July 11, 2006

Mr. Ken Kushner Anderson Park District 8249 Clough Pike Cincinnati, Ohio 45244

Re: Proposal to conduct archaeology excavations at Riverside Park.

Dear Ken:

Based on our review as requested, Natural & Ethical Environmental Solutions estimates that the proposed archaeological monitoring project should not exceed \$55,000. Thank you very much for asking us to assist you with this project. Please review and call if you have any questions. You may reach me directly at 859 384-0354 or at our office at 513 777-7400. We look forward to working with you on the project.

Sincerely,

**Natural & Ethical Environmental Solutions** 

Jeannine Kreinbrink

Jeannine Kreinbrink, MA, RPA Senior Archaeologist

Cc:TB

# LETTER REPORT FEATURE SALVAGE, SITE 33HA128 RIVERSIDE PARK, ANDERSON PARK DISTRICT HAMILTON COUNTY, OHIO

SUBMITTED TO: Anderson Park District

SUBMITTED BY: Natural & Ethical Environmental Solutions

Jeannine Kreinbrink, Principal Investigator 8857 Cincinnati-Dayton Rd, Suite 203

West Chester, Ohio 45069

DATE: June 28, 2002

#### INTRODUCTION

The Anderson Park District requested an archaeological investigation of an exposed cultural feature found eroding out of the west bank of the Little Miami River. Persons canoeing on the Little Miami River noted the feature in the vertical bank of the river and called Anderson Park District to report its location. The feature is situated within the known boundary of site 33HA128, as previously documented by Kreinbrink (1998; 2000).

Site 33HA128 is a multi-component prehistoric Native American archaeological site situated in Riverside Park. Anderson Park District owns and manages the sports park located between Roundbottom Road and the Little Miami River. The archaeological site encompasses most of the northern half of the park.

Prior to the discovery of this archaeological feature, almost all of the previously documented archaeological materials were recovered from 0-60cm below the current ground surface. The boundary delineation project conducted by N&E in 1999-2000 noted charcoal in the cut bank, approximately .5-1 meter above the gravel layer (Kreinbrink 2000). The charcoal was documented in the vertical riverbank in the vicinity of Shovel Test Grid Row G.

The feature documented in this report is located approximately .8-1.9 meters below the current ground surface, or in the same general level of .5-1 meter above the gravel layer. It is located between Shovel Test Rows E and F, or at least 15 meters downstream from the charcoal noted in 2000.

These two occurrences indicate that a separate buried cultural horizon located below the higher deposits. The horizontal boundaries of this lower cultural horizon are unknown at this time. Deep testing has not been conducted in Riverside Park.

Natural & Ethical Environmental Solutions, LLC 8857 Cincinnati-Dayton Road, Suite 203 West Chester, Ohio 45069 Phone (513)777-7400 FAX (513)777-3174

The feature is situated in a dangerous position in the vertical cut bank. The soil profile in the immediate vicinity consists of about 2.5 meters of silty clay loam over 1 meter of almost pure sand. The sand lies on top of at least 4 meters of unconsolidated large river cobbles with little soil matrix.

#### **METHODS**

The feature lies within the silty clay loam layer, about one meter above the gravel and just above the sand layer. We were unable to completely excavate the feature due to danger of bank slumping and the unstable nature of the sand and gravel below the feature.

Park personnel lowered a ladder adjacent to the feature and secured it above the bank with rope. Using the ladder for safety, N&E Staff Archaeologist A. Chris Anderson cleaned the feature profile for photographic documentation. A metric stadia rod was used for taking measurements. We prepared a sketch drawing (see attached figure) using the stadia rod measurements.

We collected a charcoal sample from near the base of the feature by scooping the charcoal into plastic bags held inside a 5 gallon bucket. A separate soil flotation sample was collected in the same manner. The remainder of the feature was left intact due to the unstable nature of the river cut bank.

#### FEATURE DESCRIPTION

The feature is a large pit feature found in profile in the vertical cut bank. It consists of an intensive soil stain measuring approximately 1.4 meters in diameter by .8-1 meter in depth. The top of the feature is located .8 meters below the current ground surface. The base of the feature is about 1.8-1.9 meters below the current ground surface. Please refer to the attached photographs

The feature exhibits internal stratigraphy and distinctive morphology. The feature walls are burned to a reddish brown for most of the visible profile. A thick layer of burned wood charcoal lies above the burned feature margins. In the bottom center, this layer is at least 15 cm thick. Above the burned wood, at least three layers of burned river cobbles and a small amount of burned limestone cover the entire feature. They form a distinct layer within the feature profile, with little soil mixture among the rocks.

The feature extends about 50-60 cm above the rock layer. Burning is visible on the feature margins to the top of the feature. Soil matrix above the rocks is a mixture of burned and unburned silty clay loam. One distinct horizontal band of burned soil is visible approximately 10 cm above the rock layer (see attached drawing).

No artifacts were visible in the feature profile. The flotation sample includes soil from above the rock layer and will be examined for the presence of artifacts. The flotation sample will be

Natural & Ethical Environmental Solutions, LLC 8857 Cincinnati-Dayton Road, Suite 203 West Chester, Ohio 45069 Phone (513)777-740 FAX (513)777-317

LC			
in the			
t pure 1 little			
і інще			
1			
above bank			
Dank			
rope.			
eature nents.			
ichis.			
l into			
in the river			
of an			
The			
ature iched			
Ched			
s are			
rcoal hick.			
nt of			
ofile,			
ature			
and			
y 10			
e the			
ll be			
7400			
3174	:		

submitted for in-depth identification of any carbonized plant seeds, nutshells, or other material. This information is important for determining site function, lifeways and food resource usage by the Native American inhabitants.

A charcoal sample was collected from the dense charcoal layer located below the rock level. This sample will be submitted for radiocarbon dating analysis. A date range will provide information on when the buried cultural layer was deposited and the time depth for alluvial deposition at the site.

#### SUMMARY AND CONCLUSIONS

This feature is very important to the investigation of site 33HA128. It will allow us to obtain a radiocarbon date range for the buried cultural horizon now known to exist at the site. The flotation analysis will provide information on lifeways and resource usage by the inhabitants of the site. The buried cultural horizon is previously unexcavated and may not be excavated in the future depending on the nature of future impacts to the site. If erosion of the riverbank is not halted, then both the surface and subsurface cultural components of site 33HA128 will continue to be endangered. The chances of additional features eroding out of the riverbank will increase as the bank approaches the intensively occupied portions of the site.

#### **ATTACHMENTS**

Sketch Drawing of the Feature (profile drawing)

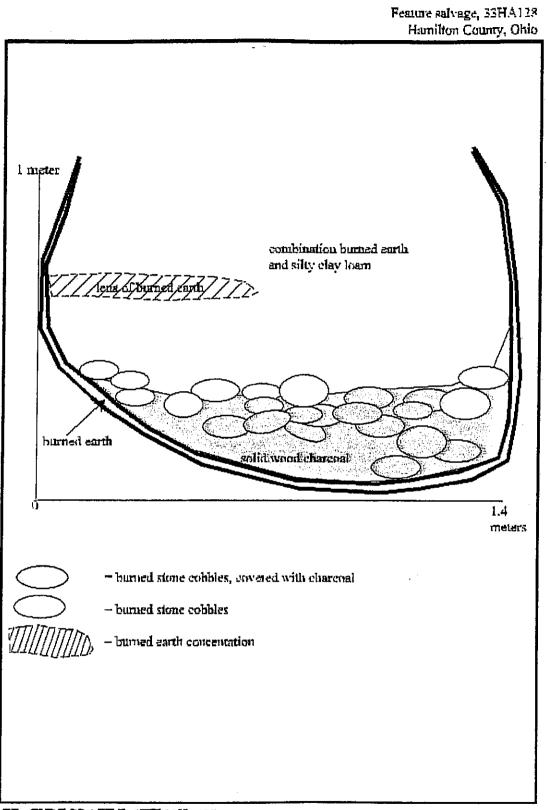
Separate documents: Site map showing location of feature Photographs of the feature

Natural & Ethical Environmental Solutions, LLC 8857 Cincinnati-Dayton Road, Suite 203 West Chester, Ohio 45069

Phone (513)777-740 FAX (513)777-317

LC				
naterial.				
sage by				
k level.				
provide alluvial				
alluvial				
btain a The				
ants of l in the t is not				
is not				
ontinue acrease				
	•			
T 7400				
7-7400 7-3174				

## Natural & Ethical Environmental Solutions, LLC



FEATURE PROFILE, SITE 33HA128
Natural & Ethical Environmental Solutions, LLC
8857 Cincinnati-Dayton Road, Suite 203
West Chester, Ohio 45069

Phone (513)777-7400 FAX (513)777-3174



SENT VIA FAX (513) 474-3999

July 11, 2006

Anderson Township Park District 8559 Broadwell Road Cincinnati, Ohio 45244

ATTN.: Mike Smith

RE: Demolition of Abandoned Structure at 3969 Round Bottom Road

Cincinnati, Ohio

Dear Mr. Smith:

We are pleased to offer for your consideration the following *budgetary* proposal for the above referenced project. We will perform the mass demolition and site restoration work as outlined below for the total sum of:

# Twelve Thousand Dollars (\$12,000.00)

#### This proposal includes:

- one (1) mobilization to the project site.
- work being performed on a merit shop basis during normal, first shift work hours (7:00 am 3:30 pm Monday thru Friday).
- obtaining all necessary demolition permits and notifications as required by local governing authorities.
- work to be coordinated such that installation of new structures and facilities will have little or no impact on demolition operations.
- continuous, uninterrupted access to demolition work areas based on a contiguous progression of the work.
- unencumbered, ready access for demolition debris staging, processing, and load-out operations.
- verification of all utility disconnects with the owner / owner's representative prior to the commencement of demolition operations.
- staffing the project with a full time superintendent and submission of daily work reports.
- utilizing heavy duty specialty demolition equipment with experienced skilled labor to complete the project.

O'Rourke Wrecking Company

660 Lunken Park Drive Cincinnati, Ohio 45226-1800 Phone (513) 871-1400 • Fax (513) 871-1313 email: info@orourkewrecking.com www.orourkewrecking.com

July 11, 2006 Anderson Township Park District, Attn.: Mike Smith Page 2 of 3

- mass demolition and removal of the existing park structure complete, including removal of all associated below-grade footings and foundations.
- demolition and removal of the associated non-public sidewalks.
- loading, hauling and proper disposal of all demolition debris materials in a legal landfill or recycle facility.
- rough grading the project site upon completion of demolition activities sloped as to achieve positive storm water drainage.
- placement of grass seed and straw mulch at all areas disturbed by demolition operations.
- any items the owner wishes to salvage have been identified prior to pricing and will be removed by the owner/general contractor prior to O'Rourke Wrecking Company proceeding with the work.
- all salvageable material (i.e. steel and non-ferrous metals) is to become the property of O'Rourke Wrecking Company.
- ten million dollars general liability insurance. It should be noted that our insurance specifically includes coverage for demolition operations of this size and scope, while many other firms proposing to perform demolition work do not have coverage specifically as a demolition specialty contractor.

#### This proposal excludes:

- salvage of any items for return to the owner.
- final cut / fill operations, finish grading, layout / construction of future asphalt parking areas or building pads.
- additional work to contract without written authorization by owner or owner's representative.
- obtaining any specialty land use permits (i.e. NPDES permits, wetlands reclamation permits, zoning permits, land disturbance permits, storm water / storm drainage permits, etc.).
- installation and / or maintenance of site security measures, including fencing, traffic control, and security personnel. Temporary fencing during active demolition work only is included (if needed).
- removal, installation, rerouting, relocating, disconnecting, terminating, capping, abandoning, and / or new utility work of any kind.
- new construction or repairs to existing construction (i.e. sidewalks, driveways, asphalt paving
  or patching, concrete paving or patching, retaining walls, permanent fencing, special site
  drainage, sub-base preparation, installation of stone base, installation of storm drainage, etc.).
- removal of pre-existing building foundations, septic tanks, underground storage tanks, fuel
  oil tanks, grease interceptors (see alternate above), cisterns, rubble fill, junk, abandoned
  vehicles, unsuitable soils, contaminated soils, etc.
- removal, handling, and / or disposal of excessive loose building contents (i.e. paper records, waste, loose debris, surplus stock, surplus food supplies, loose fixtures and furniture).
- sampling, collecting, packaging, handling, or disposal of all unidentified or unspecified containers including tanks, barrels, cans, bottles, bags and boxes.

HaWetteomBids:1905:05 3269 Round Bottom Road (budget).doc

July 11, 2006 Anderson Township Park District, Attn.: Mike Smith Page 3 of 3

- surveying, removal, handling, and/or disposal of asbestos, hazardous, contaminated and/or EPA special and/or regulated wastes (if any).
- installation / maintenance of erosion control measures (silt fence, hay bales, temporary inlets, etc).
- removal, handling, containerization or disposal of any oils (if any).
- cleaning of tanks / removal of any sludges / removal of any excess or stored chemicals.
- responsibility for incidental sidewalk, pavement and / or vegetative damage due to demolition operations.
- architectural, geo-technical, civil and / or environmental engineering.

No documents, specifications, or drawings were provided for this scope of work and any existing documents, specifications, or drawings are excluded from this proposal. We respectfully request that this proposal be made a part of any contractual agreement that is reached.

This quotation is valid for thirty (30) days. Payment in full is due in thirty (30) days after completion of project and or payment period and submission of invoice. No retainer shall be withheld from payments.

We thank you for the opportunity of bidding this project and hope to hear from you soon. If you have any questions please do not hesitate to contact us.

Sincerely,

O'ROURKE WRECKING COMPANY

*************************************
<del></del>

H./Wordcom/91ds/2006/06 3969 Round Bottom Road (budget),ibe

#### BOARD OF TOWNSHIP TRUSTEES ANDERSON TOWNSHIP HAMILTON COUNTY, OHIO

The Board of Township Trustees met in regular session at 7:00 p.m. this 20<sup>th</sup> day of July, 2006, with the following members present:

Peggy D. Reis Russell L. Jackson, Jr. Albert F. Peter

Mr. Peter introduced the following resolution and moved its passage:

#### RESOLUTION NO. 06-0720-16

# RESOLUTION OF SUPPORT FOR THE ANDERSON TOWNSHIP PARK DISTRICT'S CLEAN OHIO GRANT APPLICATION FOR THE LITTLE MIAMI SCENIC RIVER RIPARIAN CORRIDOR RESTORATION PROJECT AT RIVERSIDE PARK

WHEREAS, on March 18, 2004, pursuant to Resolution No. 04-0318-03, this Board of Township Trustees ("Board") of Anderson Township resolved to contribute \$132,500 to assist the Anderson Township Park District in its efforts to plan, permit, and execute remedial construction for a serious riverbank erosion problem at Riverside Park; and

WHEREAS, this Board resolved to participate and support this erosion repair project in large part because of the major concerns described to it by the Anderson Township Park District, including: 1) the unstable, steep bank's safety risks for citizens who utilize this park, even though the riverbank has been fenced off with snow fencing; 2) significant quantities of soil being discharged into the Little Miami River at an accelerated rate, causing water quality degradation; 3) numerous Native American artifacts and burial remains located on the bank being washed into the Little Miami River and destroyed; and 4) park facilities and related services being steadily diminished and endangered; now, therefore,

BE IT RESOLVED by the Board of Township Trustees of Anderson Township, Hamilton County, Ohio, that it earnestly supports the Anderson Township Park District's Clean Ohio Grant Application for the Little Miami Scenic River Riparian Corridor Restoration Project at Riverside Park; and

BE IT FURTHER RESOLVED that the preambles hereto are and shall for all purposes be construed to be integral and operative parts of this resolution; and



#### ANDERSON TOWNSHIP

HAMILTON COUNTY, OHIO 7954 Beechmont Avenue Anderson Township, Ohio 45255-3192 www.andersontownship.org

TOWNSHIP TRUSTEES Russell L. Jackson, Jr. Albert F. Peter Peggy D. Reis

July 7, 2006

FISCAL OFFICER Kenneth G. Dietz

Molly McClure **Executive Director** Anderson Park District 8249 Clough Pike Cincinnati, OH 45244

Phone: 513-474-5560 Fax: 513-474-5289

TOWNSHIP ADMINISTRATOR Henry C. Dolive

RE: Clean Ohio Conservation Program Application

ASSISTANT ADMINISTRATOR Suzanne M. Parke

Dear Moliv:

OFFICE MANAGER

Vicky L. Earhart

Phone: 513-474-5560 Fax: 513-474-5289

am writing in support of Anderson Park District's application for funding through the Clean Ohio Conservation Program for the proposed stream bank restoration project at Riverside Park on the Little Miami Wild and Scenic River.

FIRE CHIEF Mark Obe: Emergency: 911 Fax: 513-624-3806

PUBLIC WORKS DIRECTOR

Phone: 513-474-5080 Fax: 513-388-4693

DEVELOPMENT SERVICES DIRECTOR Steve Sievers Phone: 513-474-5123 Fax: 513-388-4484

DISTRICT 5 HDQTS. SHERIFF'S OFFICE Lt. Mike Hartzler District Commande Emergency: 911 Phone: 513-474-5770 ss hours: 513-825-2286

> LAW DIRECTOR Frederick O. Kiel Phone: 513-232-4449 Fax: 513-232-9443

On March 18, 2004, the Board of Trustees of Anderson Township resolved to contribute \$132,500 in funds to assist the Park District in its efforts to plan. permit and execute the construction for your serious riverbank erosion problem. Please refer to resolution 04-0318-03, attached. You will note that a condition of our participation was for the park district to apply for these state funds when the engineering reached a point that the project could be completed within the timeframe described by the grant.

The Trustees resolved to participate and support this erosion repair project in large part because of the major concerns you relayed: 1) The unstable, steep bank poses safety risks for citizens, specifically children who utilize this park; even though the riverbank has been fenced off with snow fence. The concern exists that someone might fall off the bank into the river and become injured from the fall or become swept up in the current of the river; 2) Significant quantities of soil are being discharged into the river at an accelerated rate causing water quality degradation; 3) Numerous Native American artifacts and burial remains located on the bank are being washed into the river and destroyed; 4) park facilities and related services are being steadily diminished and endangered.

Your project is another opportunity for our organizations to partner in order to provide more effective management of our Townships resources, and our efforts will enhance services for the citizens of Anderson Township.

Molly McClure July 7, 2006 Page 2

Once again, Anderson Township is supportive of your application for Clean Ohio funding at Riverside Park and has already demonstrated its financial support through the \$132,500 in funding to contract for professional services and eventually execute a successful permit for restoration.

Sincerely,

Kenneth G. Dietz

Anderson Township Fiscal Officer

#### BOARD OF TOWNSHIP TRUSTEES ANDERSON TOWNSHIP HAMILTON COUNTY, OHIO

The Board of Township Trustees met in regular session at 7:00 p.m. this 18th day of March, 2004, with the following members present:

Albert F. Peter Peggy D. Reis Russell L. Jackson, Jr.

Mrs. Reis introduced the following resolution and moved its passage:

### RESOLUTION NO. 04-0318-03

#### RESOLUTION AUTHORIZING EXECUTION OF FIFTH AMENDMENT TO ANDERSON COMMUNITY HERITAGE CENTER AGREEMENT

BE IT RESOLVED by the Board of Township Trustees ("Board") of Anderson Township, Hamilton County, Ohio, that the Township Administrator is hereby authorized to execute, on behalf of Anderson Township, a Fifth Amendment to Anderson Community Heritage Center Agreement in substantially the form attached hereto as Exhibit A, with such changes thereto, not materially adverse to Anderson Township, as he and the Township's Law Director shall approve; the signature of the Township Administrator thereon to be conclusive evidence of such approval.

BE IT FURTHER RESOLVED that this Board hereby finds and determines that all formal actions of this Board concerning and relating to the passage of this resolution were taken in open meetings of this Board, and that all deliberations of this Board and of any of its committees that resulted in such formal actions were taken in meetings open to the public, in compliance with all legal requirements, including (without implied limitation) R.C. §121.22, except as otherwise permitted thereby.

Mr. Jackson seconded the motion, and the roll being called upon the question of passage, the vote resulted as follows:

Mr. Peter <u>yes</u> Mrs. Reis <u>yes</u> Mr. Jackson <u>yes</u>

#### CERTIFICATION

The undersigned, duly elected and acting Township Clerk of Anderson Township, Hamilton County, Ohio, hereby certifies that the foregoing is a true copy of a Resolution duly passed at a regular meeting of the Board of Township Trustees of said Township on the 18th day of March, 2004, together with a true record of the roll call vote thereon, and that said Resolution has been duly entered upon the Journal of said Township.

#### Exhibit A

#### FIFTH AMENDMENT TO JOINT RECREATION AGREEMENT Dated March 18, 2004

WHEREAS, pursuant to Section 755.16 of the Revised Code, ANDERSON TOWNSHIP ("Township") and the ANDERSON TOWNSHIP PARK DISTRICT ("Park District") have entered into an Anderson Community Heritage Center Agreement dated as of May 6, 1991, and amendments thereto (together, the "Agreement"); and

WHEREAS, it is now appropriate to further amend the Agreement in order to advance

the recreational objectives of the parties; now, therefore

The parties to the Agreement hereby agree as follows:
SECTION 1. Terms used herein with initial capitalization and not defined herein shall

have the meanings assigned thereto by the Agreement.

SECTION 2. In order to preserve and protect the real estate known as Riverside Park, heretofore conveyed to and improved by the Park District under the Agreement, and, specifically, to assist in solving the ongoing riverbank erosion problem at Riverside Park, the Township shall pay to the Park District, not later than July 31, 2004, the sum of \$132,500, less such sums as the Park District (in consultation with the Township) shall by that date have received firm and timely commitments for from private, state, federal or other sources for the same purpose. The Park District agrees to use its best efforts to endeavor to obtain such commitments.

SECTION 3. Except as modified hereby, the terms of the Agreement shall remain in full force and effect.

SECTION 4. The preambles hereto are and shall for all purposes be construed to be

integral and operative parts of this Fifth Amendment.

IN WITNESS WHEREOF, the parties, duly authorized by resolutions of the Board of Township Trustees and of the Board of Park Commissioners, respectively, have executed this Fifth Amendment by their duly authorized officers as of the date set forth above, but actually on the date or dates set forth opposite the signatures below.

> ANDERSON TOWNSHIP. acting by and through its Board of Township Trustees

March 22 , 2004

Henry C. Donve Township Administrator

(Pursuant/to Resolution No. 04-0318-03)

ANDERSON TOWNSHIP PARK DISTRICT,

acting by and through its

Board of Park Commissioners

By: Moely Mc C Molly McClure

Park District Executive Director

# ANDERSON TOWNSHIP CLERK'S CERTIFICATE

The undersigned, duly elected and acting Township Clerk of Anderson Township, County of Hamilton, Ohio, hereby certifies that the moneys required to meet the obligations of the Township during the year 2004 under the attached contract or order (or, if this is a continuing contract, to be performed in whole or in part in an ensuing fiscal year, the amount required to meet the obligation in the fiscal year in which the contract is made) have been lawfully appropriated by the Board of Township Trustees of the Township for such purpose and are in the treasury or in the process of collection to the credit of an appropriate fund, free from any previous encumbrances. This certificate is given in compliance with Sections 5705.41 and 5705.44, Ohio Revised Code.

Dated: March 18, 2004

Kenneth G. Dietz

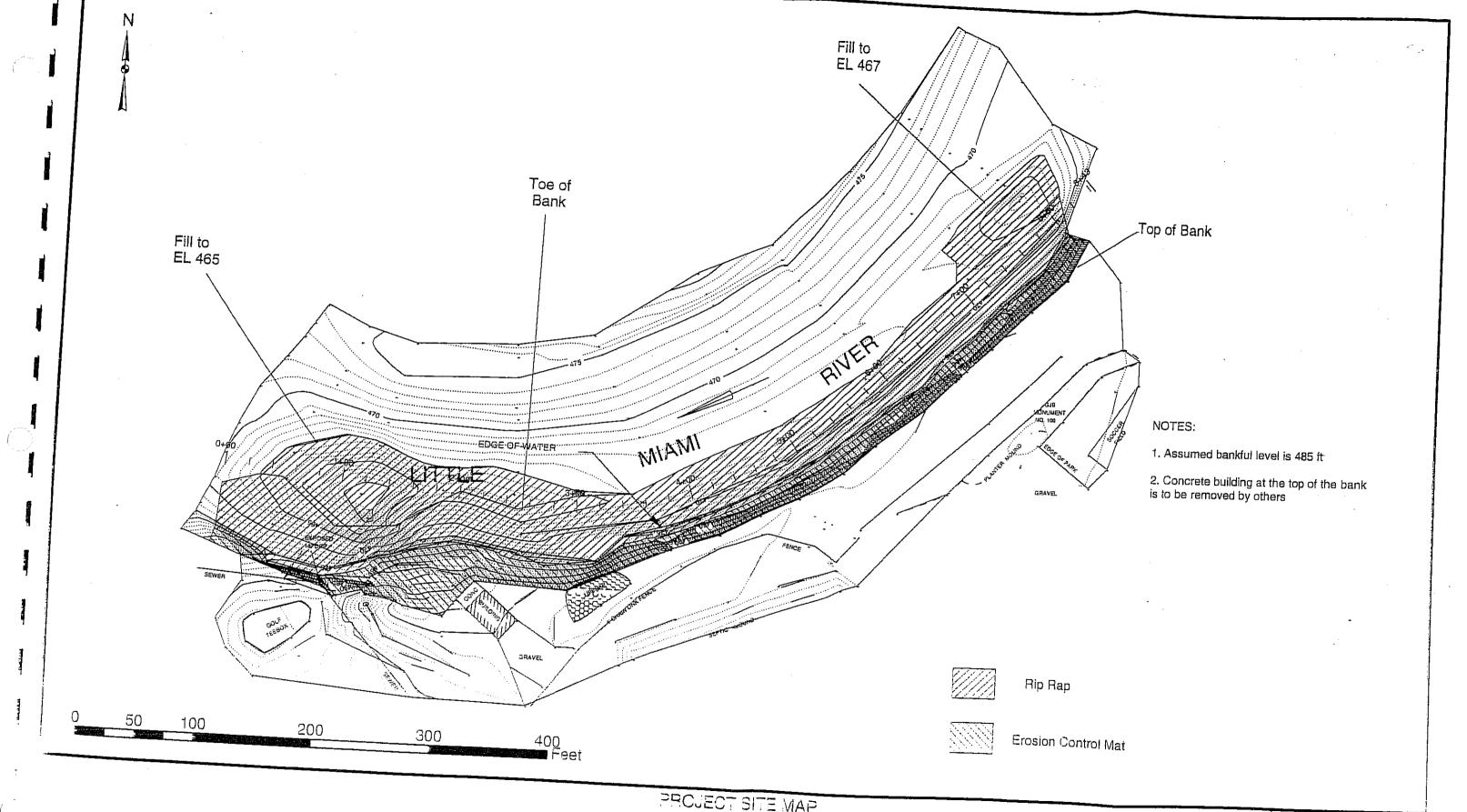
Township Clerk, Anderson Township

ESD01\5jrecres.304

# Index to map units

ArA—Ava silt loam, 0 to 3 percent slopes		
ArB2—Ava sit loom of the percent slopes	. 15	FnA Easter
ArB2—Ava silt loam, 3 to 8 percent slopes, eroded ArC2—Ava silt loam, 8 to 15 percent slopes, eroded	- 16	
ArC2—Ava silt loam, 8 to 5 percent slopes, eroded AsB—Ava-Urban land complex 3 to 5 percent slopes, eroded	10	slopes
AsB—Ava-Urban land complex, 3 to 8 percent	1 17	Gn—Genesee loam, occasionally flooded
slopes		Go—Genesee-Urban land complex, occasionally
AsC—Ava-Urban land complex, 8 to 15 percent	. 17	flooded complex, occasionally
siones		flooded
Slopes	. 18	HeF—Hennepin silt loam, 35 to 60 percent slopes
AvA—Avonburg silt loam, 0 to 2 percent slopes	. 10	TOA—Henshaw silt loam, 0 to 2 percent slopes
		HoA—Henshaw silt loam, 05 to 60 percent slopes  Hu—Huntington silt loam, occasionally flooded  Ju—Jules silt loam, occasionally flooded
Slopes	τ	Ju-Jules silt loam, occasioit- ii
BoD-Bonnell silt loom 15 to 05	. 19	La-lanier sandy learning flooded
BoD—Bonnell silt loam, 15 to 25 percent slopes	. 20	Lg—Lanier sandy loam, occasionally flooded
BoE—Bonnell silt loam, 25 to 35 percent slopes BoF—Bonnell silt loam, 35 to 60 percent slopes	20	MaB—Markland silty clay loam, 2 to 6 percent
BoF—Bonnell silt loam, 35 to 60 percent slopes CcC2—Casco gravelly loam, 35 to 15 cent slopes	20	slopes
CCC2—Casco gravelly loam, 8 to 15 percent element	21	MaC2-Markland silty clay loam 6 to 10
CcC2—Casco gravelly loam, 8 to 15 percent slopes, eroded		siones eroded 5 113 Journ, 6 to 12 percent
eroded	21	slopes, eroded
CdE—Casso loan, 15 to 25 percent slopes	22	slopes and sitty clay loam, 12 to 18 percent
CdE—Casco loam, 25 to 35 percent slopes	22	slopes, eroded
CdF—Casco loam, 35 to 70 percent slopes	24	MaE2—Markland silty clay loam, 18 to 25 percent slopes, eroded
CnB2—Cincinnati silt loam, 3 to 8 percent slopes, eroded	23	slopes, eroded
eroded eroded		McA—Martinsville silt loam 0 to 0
eroded	23	McA—Martinsville silt loam, 0 to 2 percent slopes McB—Martinsville silt loam, 2 to 6 percent slopes MnC2—Miamian silt loam, 8 to 16 percent slopes
eroded.		MnC2 Mismissine six loam, 2 to 6 percent slopes
eroded	24	MnC2—Miamian silt loam, 8 to 15 percent slopes eroded
DaB—Dana silt loam, 0 to 4 percent slopes		eroded
	24	MoD2—Miamian-Hennepin silt loams, 15 to 25
eroded slopes,		percent slones eroded
eroded	25	percent slopes, eroded
EcC2—Eden silty clay loam, 8 to 15 percent slopes, eroded		MoE2—Miamian-Hennepin silt loams, 25 to 35
eroded	26	
EcD—Eden silty clay loam, 15 to 25 percent slopes .		
	26	Slopes
EdF—Eden flaggy silty clay loam, 40 to 60 m	27	PbB2—Parke silt loam 3 to 8 porcent al
EdF—Eden flaggy silty clay loam, 40 to 60 percent slopes		eroded eroded
slopes	27	eroded
slopes		orada di loam, 8 to 15 percent slopes.
slopesEeC—Eden-Urban land complex 8 to 15 annual	20	eroded
EeC—Eden-Urban land complex, 8 to 15 percent	28	PbD—Parke silt loam, 15 to 25 percent slopes 4 PbE—Parke silt loam, 25 to 25
slopesEeD—Eden-Urban land complex, 15 to 25 accept		PbE—Parke silt loam, 25 to 35 percent slopes
EeD—Eden-Urban land complex, 15 to 25 percent	28	PcB—Parke-Urban land complex, 3 to 8 percent slopes 4
siones siones		
slopes	29	slopes
EpA—Eldean loam, 0 to 2 percent slopes		PcC—Parke-Urban land complex, 8 to 15 percent slopes
EpB2—Eldean loam, 2 to 6 percent slopes, eroded	30	slopes
EpC2—Eldean loam, 6 to 12 percent slopes, eroded ErA—Eldean-Urban land complex 0.4 slopes, eroded	30	PfC—Pate silty clay loam, 8 to 15 porcest silty
ErA—Eldean-Urban land complex, 0 to 2 percent slopes, eroded slopes	30	PfC—Pate silty clay loam, 8 to 15 percent slopes
slopesErB—Eldean-Urban land complex 2 to 6 percent		PfF—Pate silby clay loam or 10 25 percent slopes 47
ErB—Eldean-Urban land complex, 2 to 6 percent slopes	32	PfE—Pate silty clay loam, 25 to 35 percent slopes 47 PhD—Pate-Urban land complex 35 percent slopes 48
close state of partial and complex, 2 to 6 percent	U <u>Z</u>	
slopes		slopes
- ' YO - I HIGGSHE SHI (OAM) O 1- 0	32	Pn—Patton silty clay loam
FeA—Fincastle-Urban land complex, 0 to 2 percent slopes	33	PrA—Princeton sandy loam 0 to 2 accession 49
slopes.		PrA—Princeton pandy leaves 49
slopes	33	PrA—Princeton sandy loam, 0 to 2 percent slopes 50 PrB—Princeton sandy loam, 2 to 6
FoA—Fox loam, 0 to 2 percent slopes		PrB—Princeton sandy loam, 6 to 6 percent slopes 50 PrC2—Princeton sandy loam, 6 to 4 to 6 percent slopes 51
	34	
and the state of t	34	
		51

dA-Raub silt loam, 0 to 2 percent slopes	51	SxC—Switzerland-Urban land complex, 8 to 15	
n—Hoss loam, rarely flooded	52	percent slopes	60
PA—Hossmoyne slit loam, 0 to 3 percent slopes	52	Ud—Udorthents, clayey	62
PB2—Hossmoyne silt loam, 3 to 8 percent slopes	عد	UI—Ugornenis, Inamy	62
eroged	53	UgB-Urban land-Elkinsville complex, 3 to 8 percent	01.
PU2—ROSSMoyne silt loam. 8 to 15 percent	-	siopes	62
siopes, eroded	54	UgC—Urban land-Elkinsville complex, 8 to 15	-
A-Hossmoyne-Urban land complex in to a	0-,	percent slopes	63
percent slopes	54	Uh-Urban land-Huntington complex, frequently	
D—nussingyne-urban land complex 3 to 8	• ,	flooded	63
percent slopes	55	UmbUrban land-Martinsville complex, 3 to 8	
U—Hossmoyne-Urban land complex 8 to 15		percent slopes	64
percent slopes	56	UmC—Urban land-Martinsville complex, 8 to 15	
VD2—HUSSell silt loam, 3 to 8 percent slopes		percent slopes	64
e100ea	56	Uo—Urban land-Patton complex	65
Dnusself-Urban land complex. 3 to 8 nercent		UrB—Urban land-Rossmoyne complex, 0 to 8	66
Siupes	57	percent slopes Ux—Urban land-Stonelick complex, frequently	66
Conclusion time serior locality trediteution flouded	57	flooded	66
B2—Switzerland silt loam, 3 to 8 percent slopes,		Wa—Wakeland silt loam, occasionally flooded	67
erouau	58	WbA—Warsaw Variant sandy loam, 0 to 2 percent	VI
C2—Switzerland silt loam, 8 to 15 percent		slopes	68
slopes, eroded	58	WeA-Wea silt loam, 0 to 2 percent slopes	68
D2—Switzerland silt loam, 15 to 25 percent		WnA—Whitaker loam, 0 to 2 percent slopes	69
slopes, eroded	59	XtA—Xenia silt loam, 0 to 2 percent slopes	69
Dercent sinage		XfB2—Xenia silt loam, 2 to 6 percent slopes,	
1	59	eroded	70



PROJECT SITE MAP

Proposed Bank Protection Anderson Township Riverside Park Hamilton County, OH



Scale: 1:900

Source: GEC/G. J. Seraing

Troy Euton
Anderson Park District
513-388-5085
tuton@andersonparks.com

RE: Request for Proposal for Wild and Scenic River Bank Stabilization

Dear Mr. Euton,

We are pleased to submit this proposal for providing the design and construction oversight necessary for stabilizing the Little Miami River bank at Riverside Park. We have included within this proposal the qualifications of key personnel that would work on this project, examples of similar projects both in scope and on Wild and Scenic Rivers, and a description and timeline of the services we feel will be necessary to accomplish your project. This proposal assumes that park district personnel and equipment will perform the actual construction of the project.

Oxbow River & Stream Restoration, Inc. was incorporated in the State of Ohio in 1956. Since that time, we have preformed virtually all types of water resource projects including Lake Erie shoreline protection and jetty construction, logjam removals, channel relocations, fisheries enhancement and habitat, stream and wetland restoration, bioengineering of steep slopes and bank stabilization. This year is our 50<sup>th</sup> year and we have successfully completed more than 160 river or stream restoration type projects in five states. While we are a design-build company, which means that we build what we design and we stand behind what we build, this project will benefit from our unparalleled design and build experience because we bring that construction and implementation expertise to the Little Miami Bank Stabilization Project.

#### **KEY PERSONNEL**

The design and construction oversight for this project will be managed by three key personnel: Nancy Seger, P.E.; Steve Phillips, CPESC; and Joel Bingham, biologist. Together, these three represent a multi-disciplinary approach that will be responsible for keystone design elements, permitting and construction oversight. We have provided individual resumes as appendices.

Nancy Seger is a registered Professional Engineer in the State of Ohio. Nancy has extensive experience in plan development, plan review, project management and project permitting. She has been involved in many large-scale restoration projects that require extensive coordination between multiple regulatory agencies, including SHPO. Nancy, as a lead engineer or project manager has managed over 150 million dollars of restoration projects.

Steve Phillips is a Certified Professional in Sediment and Erosion Control (CPESC) and is currently the President of Oxbow River & Stream Restoration, Inc. Steve is one of the leading practitioners of stream restoration in Ohio. He has more than 30 years experience in all phases of restoration including project assessment, design and implementation.

natural channel design, bio-engineering, stream management 2905 Klondike Road, Delaware, Ohio, 43015

ph 740-362-4134 fax740-362-4234

www.oxbowriver.com



Steve has also contributed to the development of stream protection and permitting guidelines for regulatory agencies and has provided many workshops and short-courses on stream design in Ohio. Steve has organized and coordinated interactive educational forums, conferences, training sessions and field days for universities, local watershed groups and county governments.

Joel Bingham's experience combines a strong background in biology with advanced training in stream morphology and natural channel design. His strengths lie in the practical application of training and field experience as he has performed morphological evaluations of over 20 separate sites in the last two years. In addition, Mr. Bingham has managed numerous types of projects ranging from fishery evaluations, use-attainment studies, and lake and stream water quality assessments to stream restoration projects over his eight years of project management experience. He is also familiar with many the aspects restoration and mitigation including permitting, morphology surveys, design, construction oversight, implementation and monitoring.

Mr. Bingham's responsibilities include the collection and analysis of morphological and biological data relating to specific projects and Oxbow's reference site database. Recently he has begun to analyze the movement of bed load and suspended sediment at several project sites in effort to better predict and design self-maintaining channels. He also develops restoration designs as well as assists engineers by utilizing such programs as AutoCAD, ArcView GIS and RIVERmorph. Mr. Bingham's responsibilities also include the implementation and construction of projects supporting the adaptive management process and design build ethic of Oxbow.

#### **EXAMPLES OF SIMILAR PROJECTS**

Oxbow River & Stream Restoration, Inc. has successfully many designed and constructed similar projects. Locally, we have performed projects on the East Fork of the Little Miami (County Soil & Water Conservation District), Stonelick Creek (County Engineer), the Great Miami River (CINergy) and the Little Miami River upstream at Milford (City of Milford). The last project involved a very similar effort for the City of Milford. That project involved the stabilization of a severely eroding bank in Riverside Park and was successfully designed and constructed in 2003. Currently, we are in the design of a second phase for Milford immediately downstream of that project. Photos below document the bank stabilization project on the Little Miami at Milford.

2

natural channel design, bio-engineering, stream management 2905 Klondike Road, Delaware, Ohio, 43015 ph 740-362-4134 fax740-362-4234

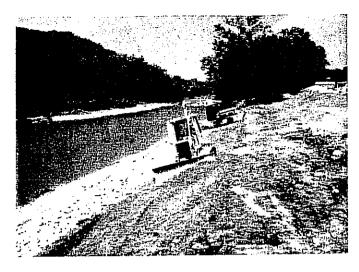


Photo above left shows the bank erosion and failure of 60-inch storm water headwall before restoration. Photo top right bank shows erosion along the ball fields of Riverview Park before restoration. Photo bottom right shows the failure of the 60-inch storm water pipe cutting back through the park.

Ġ

natural channel design, bio-engineering, stream management 2905 Klondike Road, Delaware, Ohio, 43015

on 740-362-4134 fax740-362-4234 www.oxbowriver.com





Above left, during construction looking upstream. Above right, installation of Coir fabric looking upstream





Above left, looking downstream and after completion of final grading, installation of Coir fabric and planting.

Above right, looking upstream immediately after construction.

natural channel design, bio-engineering, stream management 2905 Klondike Road, Delaware, Ohio, 43015

ph 740-362-4134 fa www.oxbowriver.com

fax740-362-4234







Above, the project at Milford after one year looking downstream.

#### SCOPE OF SERVICES

#### 1. Field Survey, Site Assessment, Conceptual Design And Alternatives

Oxbow River & Stream Restoration, Inc. would perform all necessary field survey and site assessment necessary to obtain data and support the development of alternatives and a site plan. This task would include limited field survey to obtain both horizontal and vertical data for significant hydraulic features pertaining to the restoration areas and supplementing available countywide topographic information. This survey would also establish benchmarks and local control points on the project site. This task would then create conceptual plan sheets and provide costs and analysis of two alternatives for review and comments. The alternatives and cost analysis would be submitted to the Anderson Park District for review and comment prior to developing the final design package.

5

natural channel design, bio-engineering, stream management
2905 Klondike Road, Delaware, Ohio, 43015
ph 740-362-4134 fax740-362-4234
www.oxbowriver.com

#### 2. Final Design

This task would produce all drawings and details necessary to obtain the 404 permit from the Louisville District Army Corp of Engineers and the 401 Water Quality Certification from OEPA. Because the Ohio EPA 401 permitting process has changed slightly, it may not be required to submit three alternatives, i.e., the preferred alternative, a least impact alternative and a donothing alternative. Oxbow River & Stream Restoration, Inc. would bring forward two slope/channel stabilization scenarios as alternatives. This task will also include the development of a hydraulic model using the U.S. Army Corps of Engineers' HEC-RAS hydraulic backwater model used to model the final design. To the extent practical, the hydraulic modeling for this site will be supplemented by information from the study performed to establish the flood hazard information published by the Federal Emergency Management Agency (FEMA). For the purpose of costing, we assume several hydraulic modeling iterations and three project meetings occurring generally 1) following collection of additional field information, 2) following review of the 50% design submittal, and 3) following review of the 90% design submittal and 3 public meetings in this effort.

#### 3. Permitting

Once final designs have been completed, reviewed and accepted by the client, the plans will be submitted to the US Army Corp of Engineers for the appropriate permit. The Corp will distribute the plans to the National Park District, OEPA, ODNR and US Fish and Wildlife for comments. The issuance of a permit will require a minimum of 6 months from submittal date. The major time constraint is the review process within the OEPA 401 unit and the National Park Service.

#### 4. Construction Oversight

Oxbow River & Stream Restoration, Inc. would provide at least a 1-day pre-construction training meeting with the Park District construction crew. Oxbow River & Stream Restoration, Inc. would also provide at least 7 days or 70 hours of construction oversight during project implementation (this would include some travel time). Our field expertise with actual construction will streamline this effort considerably and provide the Park District personnel a link to real world experience.

#### 5. As-Built Survey And Project Report

Oxbow River & Stream Restoration, Inc. would prepare and submit for review a post construction as-built survey as well as a final report to be submitted to the Corp after project completion.

#### PROJECT TIMELINE AND BUDGET

TASK	START	COMPLETE BY
1. Survey, field assessment, conceptual designs for	Notice To Proceed	*60days
review		

natural channel design, bio-engineering, stream management 2905 Klondike Road, Delaware, Ohio, 43015

ph 740-362-4134 www.oxbowriver.com

fax740-362-4234

Anderson Pa	rk District	Bank Stabilization Ja	nuary 16, 2006
-------------	-------------	-----------------------	----------------

2. Final Design (includes	Notice To Proceed	*45 days
permit reviews and	•	
meetings)	,	
3. Permitting and acceptance		6 months from submittal
4. Construction management		
5. As-built and final report to		12 months from
Corp of Engineers		permit

<sup>\*</sup> Is dependent upon length of review cycles by client and stakeholders

#### FEES

The lump sum fees for services described are a not-to-exceed basis and are detailed below. Out-of-Scope fees and additional meetings requested by the client will be billable at \$85 per hour plus reimbursable expenses. Additional construction oversight will be on an as-needed basis billed at \$85 per hour plus reimbursable expenses. Oxbow will bill for expenses monthly and invoices are due net 30 days.

TACIZ	1 5-2-2-3-3-3-3-3-3-3-3-3-3-3-3-3-3-3-3-3-	T		
TASK	DISCIPLINE	EFFORT	HOURLY	TOTAL COST
			RATES	OF TASK
1. Survey, field	Survey crew	48	\$ 130	\$ 19,120.00
assessment, conceptual	PM	40	\$ 85	'
designs for review	Senior Engineer	40	\$ 85	
	Biologist	64	\$ 60	
	CAD tech	64	\$ 35	
2. Final Design	PM	48	\$ 85	\$ 12,320.00
	Senior Engineer	48	\$ 85	4 12,520.00
	Biologist	32	\$ 60	
	CAD Tech	64	\$ 35	
3. Permitting and	PM	48	\$ 85	\$ 4,080.00
acceptance (includes				Ψ 1,000.00
permit reviews and				
_meetings)				
4. Construction	Senior Engineer	70	\$ 85	\$ 5,950.00
management	J			Ψ 3,930.00
5. As-built and final	Survey crew	32	\$ 130	\$ 6,880.00
report to Corp of	PM	24	\$ 85	ψ 0,000.00
Engineers	İ	<del>- ,</del>	4 03	:
	<del></del>	. <u> </u>	1	

# OXBOW PROPRIETARY MATERIALS AND INTELLECTUAL PROPERTY

All design specifications, illustrations, photographs, CAD drawings furnished by Oxbow will be licensed for use to the client for the above project contract with the understanding they must display the name of Oxbow River & Stream Restoration, Inc. and they will remain the sole property of Oxbow River & Stream Restoration, Inc. This contract recognizes that the patent, copyright and trademark rights which may ordinarily be associated with any such intellectual

natural channel design, bio-engineering, stream management

2905 Klondike Road, Delaware, Ohio, 43015

ph 740-362-4134 fax740-362-4234 www.oxbowriver.com

property belong to Oxbow River & Stream Restoration, Inc. and that the client or it's agents may not make or take copies thereof without the prior written consent of Oxbow River & Stream Restoration, Inc. outside of the project scope.

#### **CLIENT CONFIDENTIALITY**

Oxbow River & Stream Restoration, Inc. maintains a strict policy of client confidentiality. All information regarding clients' samples and data are kept confidential in Oxbow's files and released only to authorized personnel named by the client. All original data sheets, logs, notes, reports and memoranda are stored in Oxbow's archives and retained for a minimum of five years.

Oxbow River & Stream Restoration, Inc. will provide a "Wild and Scenic River Bank" Stabilization Design and Plans" in accordance with methods outlined in this proposal for the fees quoted.

If you concur with this proposal, please sign and provide one original copy of this proposal as our formal authorization-to-proceed. Thank you for the opportunity to participate in this restoration project. If you have any questions, please call out office or cell @ 614-832-9501.

Sincerely,

Steve Phillips

Steve Phillips, CPESC President, oxbow RIVER & STREAM RESTORATION, INC.

Accepted by: Mrely Mcacle

Title: Executive Director

anaen ana 👌 era 🐷 erst 🦚 natural channel design, bio-engineering, stream management 2905 Klondike Road, Delaware, Ohio, 43015 ph 740-362-4134 fax740-362-4234 www.oxbowriver.com



#### Nancy A. Seger, P.E.

#### Education

The Ohio State University B.S. Agricultural Engineering - 1994

#### Licensure

Professional Engineer, State of Ohio

#### Capabilities

#### **Engineering & Project Management**

#### Design

- Design of various water quality restoration projects including passive and active treatment of chemically impaired waters through use of limestone leach beds, steel slag leach beds, wetland treatment, Pyrolusite, and stream dosing operations
- Design of various stream restoration projects for habitat enhancement and flood abatement through use of bioengineering and natural channel design.

- Watershed assessments to identify water quality problem areas
- Sampling of areas to quantify problem
- Development of abatement strategies for water quality impairment areas
- Involved in the development of numerous Acid Mine Drainage Abatement and Treatment Plans and Mining TMDLs

#### Permitting

ACOE 404 and Nationwide permitting, OEPA 410 water certification, ODNR Division of Water dam safety and levee, floodplain, OEPA NPDS, SWPPP, ODOT roadway

#### Construction

- Construction oversight of various water quality restoration projects
- Contracting and administration of public bidding process
- Negotiation of bid costs and project change orders

#### Project Management

- Management of various OEPA 319 and US Department of the Interior Office of Surface Mining Appalachian Clean Stream Initiative Grants with local watershed sponsors
- Management of ecosystem restoration projects with the ACOE
- Management of multi-million dollar program budget serving multiple county area
- Coordination of multi agency and citizen group projects with the intent of restoring water quality
- Technical advisor to various watershed organizations in southeastern Ohio
- Grant writing
- Management of multi disciplined design teams

#### **Examples of Specialized Training**

- Steffen, NRCS Fluvial Geomorphology Workshop April 1998
- Rosgen & Hey, Fluvial Geomorphology for Engineers October 1998
- Newbury, Waterloo Stream Course, Designing Stream Restoration Works October 2000

natural channel design, bio-engineering, stream management 2905 Klondike Road, Delaware, Ohio, 43015 ph 740-362-4134 fax740-362-4234

www.oxbowriver.com

10

#### Joel Bingham, Restoration Ecologist Capabilities

#### Education

Hiram College, Hiram, Ohio B.A. Biology 1998 Graduated Cum Laude

#### Stream Assessment and Aquatic Biology

#### Hydrology

- Sampling: stream classification, stream channel cross section and longitudinal profiles, discharge measurements, bed load calculations
- Specific: Channel design, reference site selection, construction oversight

#### Habitat

- Methods: Ohio EPA's QHEI, HHEI, U.S. EPA Physical Characterization
- Sampling: GPS specific habitat mapping, underwater photography, substrate analysis, pebble count
- Specific: Habitat recommendations, pond and stream design, channel and bank stability assessments

#### Permitting

- Specific: 404 and Individual 401 permit application completion, agency coordination, Nationwide Permitting 27 Stream and Wetland Restoration Fisheries
- Methods: Ohio EPA BioCriteria Protocols, Rapid Bioassessment Protocols (RBP)
- Sampling Techniques: Electroshocking, hoop netting, gill netting, seining
- Data Analysis: Index of Biotic Integrity (IBI), Modified Index of Well-Being (MIwb), Proportional stock densities (PSD), Relative Weight (Wr)
- Specific: Fish stocking recommendations, fish kill investigation

#### Macroinvertebrates

- Methods: Ohio EPA BioCriteria, Rapid Bioassessment (RBP)
- Sampling: Hester-Dendy deployment and collection, D-frame kick net, ponar sampling
- Data analysis: Invertebrate Community Index (ICI), Shannon Wiener Index, Hilsenoff Biotic Index (HBI)

#### Freshwater Mussels

- Sampling: Scuba, snorkeling, noodling, collection and identification
- Specific: Underwater sampling, underwater grid construction

#### · Physical and Analytical Chemistry, Limnology

- Sampling: Hydrolab® multiprobe, YSI 6920 multiprobe continuous monitor, chlorimeters, Kemmerer and Van Dorn samplers, secchi disk, sediment sampling, bathymetric surveys
- Specific: Trophic State Index (TSI), dissolved oxygen profiles, continuous water quality studies, mixing zone studies, total suspended solids (TSS) evaluations

#### **Examples of Specialized Training**

- Rosgen Applied Fluvial Geomorphology Level I and II, Level III- September 2005
- Ohio EPA's Primary Headwater Habitat Assessment
- Ohio EPA's ORAM version 5.0 May 2005
- ODOT Categorical Exclusion Training
- 40 hr HAZWOPER
- Advanced and Dry Suit Certified PADI

3230 natural channel design, bio-engineering, stream management 2905 Klondike Road, Delaware, Ohio, 43015 ph 740-362-4134 fax740-362-4234 www.oxbowriver.com

11

# Steve Phillips, CPESC Principal

#### Capabilities

#### Restoration Design and Management

- Design and specification preparation
- Whole ecosystem approach
- Natural channel design
- Bioengineering and hard engineering approaches
- Construction oversight
- Plan review
- Construction cost estimates

#### River and Stream Assessment

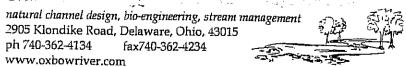
- Field surveys
- Site assessment
- Geomorphic assessment and classification
- Channel stability analysis
- Hydrologic and hydraulic analyses
- Habitat analysis
- Long-term monitoring and evaluation

#### Restoration Implementation

- 25 years experience in stream construction
- Bioengineering techniques
- Habitat enhancement
- Native riparian vegetation
- Substrate evaluation
- Local/indigenous bed materials
- Soil analysis and amendments
- Sediment and erosion control
- Low ground pressure equipment
- Low-impact construction techniques

#### **Examples of Specialized Training**

- Over 80 completed restoration projects in Ohio
- Specialized training and practical experience in application of: Ohio EPA Qualitative Habitat Evaluation Index (QHEI); US Forest Service Rapid Stream Assessment; Newbury Stream Restoration; Palmiter Stream Restoration; Rosgen Stream Channel Classification and Design; Rosgen Applied River Morphology; Stream Restoration using Bioengineering Design (USEPA); Ohio EPA water quality monitoring and assessment.
- Planning/leadership training: ecological risk assessment; natural resource conflict resolution; watershed planning.







# Ohio Department of Natural Resources

BOB TAFT, GOVERNOR

SAMUEL W. SPECK, DIRECTOR

Division of Natural Areas & Preserves Tom Linkous, Chief 2045 Morse Rd., Bldg. F-1 Columbus, OH 43229-6693 Phone: (614) 265-6453 Fax: (614) 267-3096

June 26, 2006

Nancy Seger
Oxbow River & Stream Restoration
2905 Klondike Rd.
Delaware, OH 43015

Dear Ms. Seger:

After reviewing our Natural Heritage maps and files, I find the Division of Natural Areas and Preserves has records of rare or endangered species within the area outlined on the map of the Oxbow River & Stream Restoration, Inc. Riverside Park Stream Bank Stabilization project. The site is located 0.5 mi. NE. of the junction of Edwards Rd. and Round Bottom Rd., Anderson Twp., Hamilton Co., Madeira Quadrangle. Anodonta suborbiculata, Flat Floater, has an Ohio Status of Special Concern. Noturus eleutherus, Mountain Madtom, is Endangered in Ohio. Obliquaria reflexa. Threehorn Wartyback, is Threatened in Ohio. Truncilla donaciformis. Fawnsfoot, is Threatened in Ohio. Truncilla truncata, Deertoe, has an Ohio Status of Special Concern. The map I have included with this letter displays the locations of these records. Becky Jenkins of the Division of Wildlife should be contacted regarding possible impacts to rare animal species. She can be reached at (614) 265-6631.

There are no existing or proposed state nature preserves at the project site. We are also unaware of any unique ecological sites, geologic features, breeding or non-breeding animal concentrations, state parks, state nature preserves, state forests, or wildlife areas within the project area. However the site is on the Little Miami State Scenic River. John Wolary, Scenic River Coordinator, should be contacted regarding possible impacts to the river. He can be reached at (513) 934-0751. The site is also near the Avoca Park. The Hamilton County Park District should be contacted regarding possible impacts to the park. They can be reached at (513) 521-7275. The red line on the map represents the approximate boundary of the park.

ì				
•				

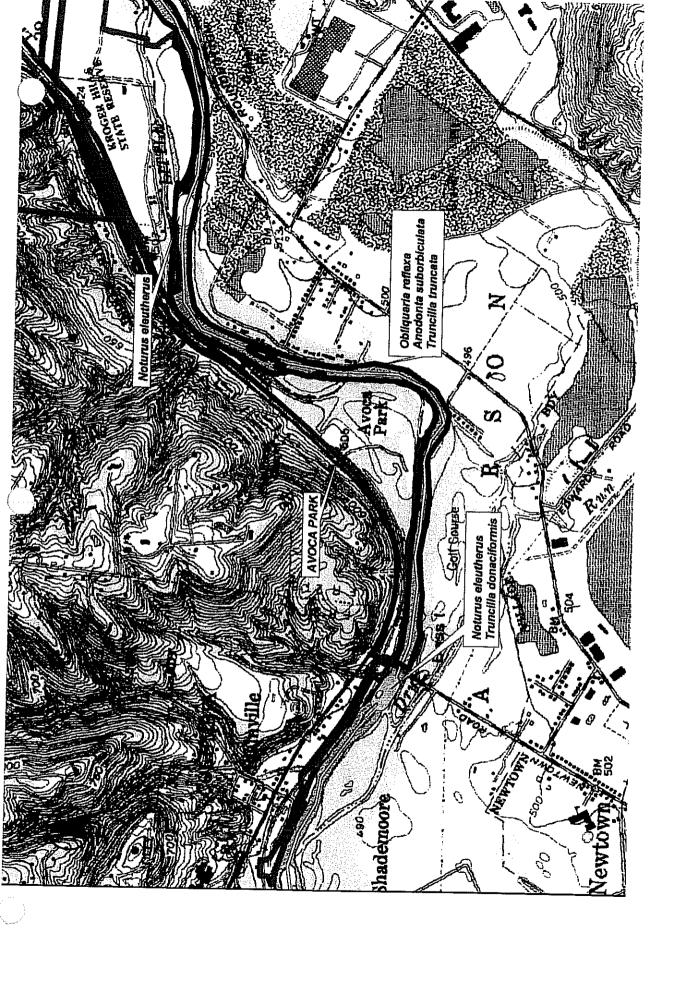
June 26, 2006 Nancy Seger Page 2

Our inventory program has not completely surveyed Ohio and relies on information supplied by many individuals and organizations. Therefore, a lack of records for any particular area is not a statement that rare species or unique features are absent from that area. Although we inventory all types of plant communities, we only maintain records on the highest quality areas. For National wetlands Inventory maps, please contact Madge Fitak in the Division of Geological Survey at (614) 265-6576. Aerial photos may be obtained from ODOT at (614) 275-1369. USGS maps can be requested directly from the U.S. Geological Survey at 1-888-275-8747.

Please contact me at (614) 265-6409 if I can be of further assistance.

Sincerely,

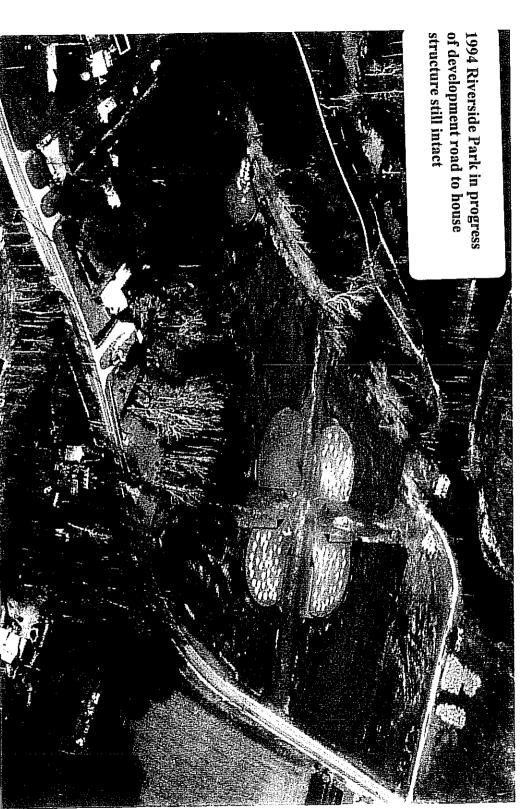
Butch Grieszmer, Data Specialist Resource Services Group







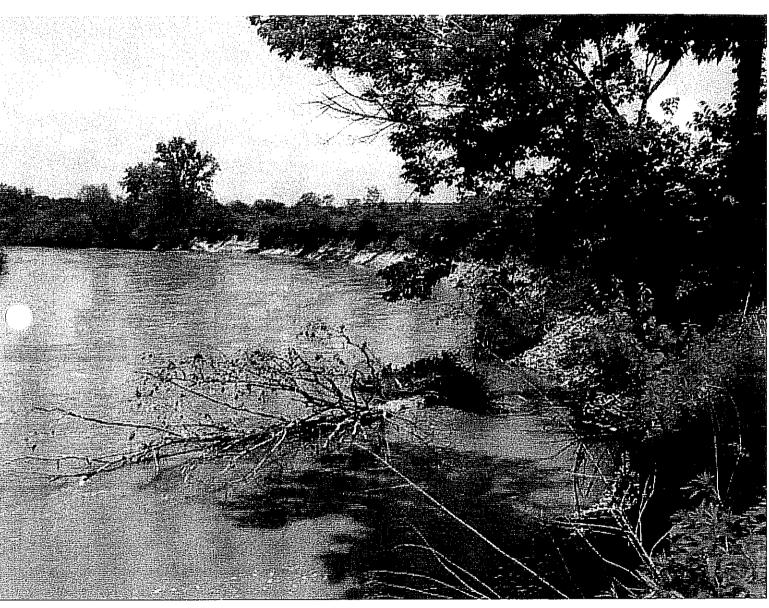






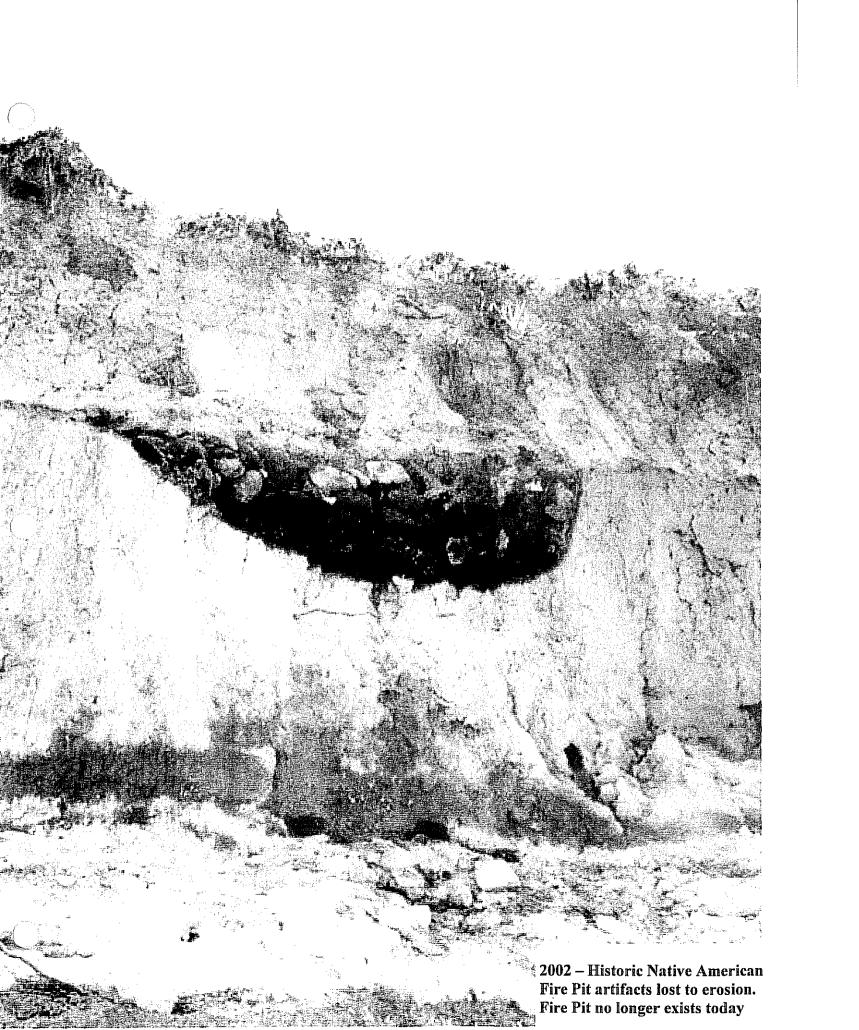
2001 – Riverbank close-up

·up			



2002 – Tree lost to erosion

rosion			





2002 – Native American Fire Pit



2004 – Another example of bank eroding into river

of bank			

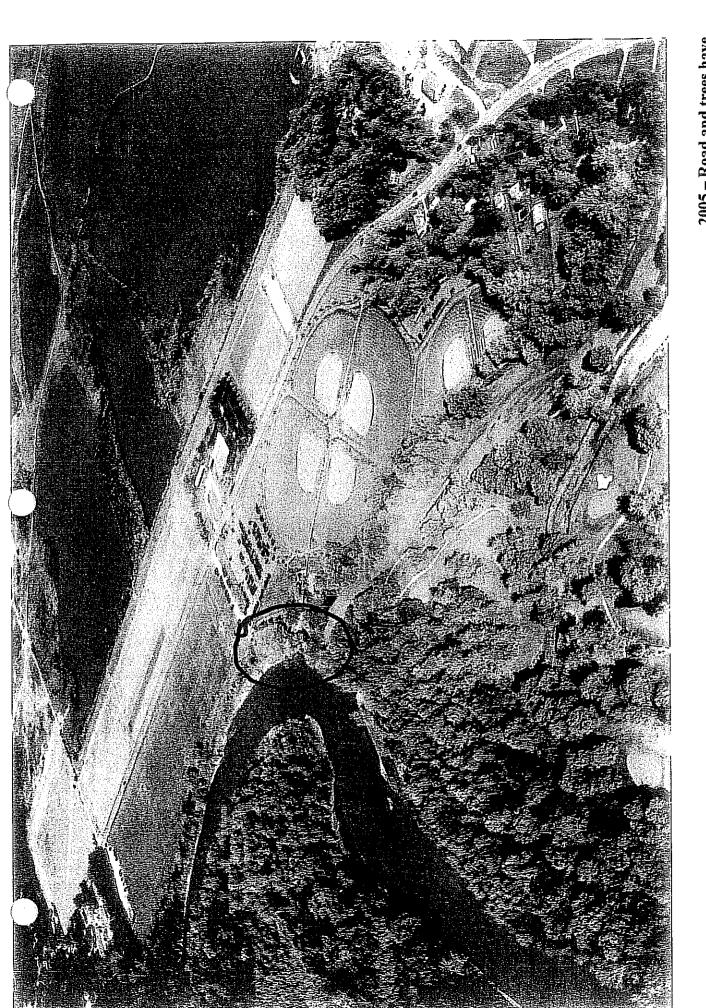




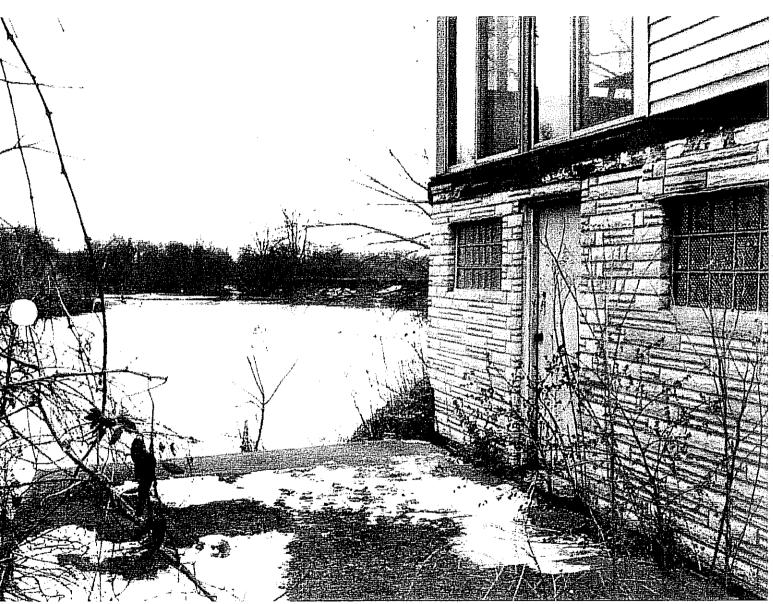
2004 – Closer view of bank eroding into river







2005 – Road and trees have eroded into river



2005 — House structure to be removed sitting on river's edge	



## The Ohio Public Works Commission

65 East State Street, Suite 312, Columbus, Ohio 43215-4213

Commissioners

Chair -Joseph B. Williams John L. Frola, Jr
Blair A. Hillyer
Todd Ketchner
Merlin "Boots" Sheets
William N. Morgan
James W. Sumner

*Director*W. Laurence Bicking

June 30, 2006

Molly McClure, Director Anderson Park District 8249 Clough Pike Cincinnati, Ohio 45244-2746

Dear Ms. McClure:

Thank you for providing us with documentation of the official name of your organization and its designation as park authority as defined in section 164.20 of the Ohio Revised Code.

Park authorities, as defined by section 164.20 of the Ohio Revised Code, are being assigned an applicant code compatible with our system for local political subdivisions in order for the Commission to track project activity.

For reference purposes your Applicant Code is 061-02121.

This code will appear on documents, reports and correspondence relative to projects funded by the Commission.

Thank you for your cooperation in documenting your eligibility for funding by the Commission through The Clean Ohio Conservation Program.

Sincerely,

W. Laurence Bicking

Director

614-466-0880 www.pwc.state.oh.us

its				
1				
	•			
the				
n				
	***************************************			



#### February 15, 1996

George V. Voinovich • Governor Donald C. Anderson • Director

Mr. Troy Euton, Operations Director Anderson Park District 8249 Clough Pike Cincinnati, Ohio 45244

Dear Mr. Euton:

Scenic Rivers staff have completed a review of your proposed improvements to the Riverside Park adjacent to the Little Miami State and National Scenic River. I understand that you and your staff have met on site with Bob Gable, SW Ohio Scenic River Coordinator, on several occasions to discuss this project.

I herein grant approval in accordance with O.R.C. 1517.16 for you to commence with this project under the following conditions.

- Appropriate sediment and erosion controls shall be implementd on site before earthwork commences and properly maintained throughout the duration of this project. All denuded areas shall be seeded and mulched immediately upon the competion of earthwork.
- 2. The Perimeter of the mound sewage treatment system shall be located a minimum of 100 feet from the top of the bank of the Little Miami River. The area between the mound and the river shall be revegeated with native tree species. All other areas within 120 feet of the river bank shall be revegetated with native tree species.
- 3. Any structural repairs to the existing house adjacent to the Little Miami River will be permitted providing those repairs do not involve any excavaation or earthwork adjacent to the Little Miami River. No new structures will be permitted within 120 of the Little Miami River.

If you have any questions please contact Bob Gable at 513-854-0350.

Sincerely,

attent hence for

Guy L. Denny, Chief Natural Areas and Preserves

GLD/tmc

cc: Bob Gable



George V. Voinovich • Governor Frances S. Buchholzer • Director

August 31, 1993

Ms. Molly McClure, Director Anderson Park District 8249 Clough Pike Cincinnati, OH 45244-2746

Dear Ms. McClure:

In accordance with ORC Section 1501.17, I hereby grant my authority for your park district to proceed with Phase I development of Bicentennial Park, with those conditions as specified in your letter of August 9, 1993.

Later approval for other phases of the project which involve the 120' buffer along the Little Miami River will be based on review of those plans when submitted and will require a separate approval.

Sincerely,

FRANCES S. BUCHHOLZER

Director

FSB/slc

#### DEPARTMENT OF THE ARMY

U.S. ARMY ENGINEER DISTRICT, LOUISVILLE CORPS OF ENGINEERS P.O. BOX 59 LOUISVILLE, KENTUCKY 40201-0059

http://www.lrl.usace.armv.mil/

### MEMORANDUM FOR RECORD

23 June 2004

SUBJECT: City of Olney, Richland County, Illinois Section 205 Preliminary Assessment

1. On June 3, 2004, members of the U. S. Army Corps of Engineers (COE) met with Troy Euton of the Anderson Township Park District (ATP) and members of the National Park Service (NPS) and Ohio Department of Natural Resources (ODNR) to discuss the Section 14, streambank stabilization project currently underway at the Anderson Township Park (Riverside Park) along the Little Miami River. Because of the Little Miami River's designation as a Wild and Scenic River, the NPS is conducting a Section 7 review of the proposed plan. The meeting was set up to give the project delivery team (PDT) an opportunity to address the NPS's questions generated from the Environmental Assessment (EA) and the subsequent April 2004 letter (responding the NPS's initial questions). The names of the attendees are listed below:

Sonia L. Suggs (COE - Project Manager) Steven Hite (COE - Project Engr.) Troy Euton (APD - Planning Director) Jerry Ballard (ODNR) Sue Jennings (NPS) Dean Alexander (NPS) Van Shipley (COE - Biologist)
Chuck Crusham (COE - Construct. Rep.)
Paul Labovitz (NPS)
Bob Gable (ODNR)
Kim Johnson (NPS)
Jennifer Pederson (NPS)

- 2. Ms. Jennings began the meeting by asking for a synopsis of the park's history. Mr. Euton discussed the park's history highlighting the purchase of the park, the history of the erosion problem, failed efforts to stabilize the bank (done with ODNR's guidance), and efforts that have led to the Corps' participation in the stabilization efforts. The project background is chronicled in the April 2004 letter mailed to the NPS and ODNR.
- 3. Ms. Johnson raised a question about the purpose of the live siltation. Mr. Shipley discussed the purpose and benefits of the live siltation as outlined in the EA and April 2004 letter. The NPS also asked questions about the purpose of the bendway weirs, the removal of the building, and questions about the archaeological resources to be protected under the Section 14 program. While answered at the site, this information was included in the April 2004 letter.
- 4. Ms. Pederson questioned the data recovery costs for the cultural resources outlined in the April 2004 letter. The 2004 letter stated that a conservative estimate for 100% data recovery would cost well over one million dollars. The letter also stated the estimate was based on evaluations of recent mitigation projects and archaeological field experience. Ms. Suggs explained the costs were included after discussions with a COE archaeologist

and Dave Snyder of the Ohio Historic Preservation Office. Ms. Pederson questioned the extent of investigations performed to determine the site's significance. While a Phase I was conducted, she raised questions about a Phase II and Phase III.

Ms. Suggs explained that the Phase I had been conducted, however, under Section 14 the program goal is to protect vital public facilities and those eligible for registry on the National Historic Register of Historic Places. The site is on the Ohio State Register and has been determined eligible for inclusion on the National register therefore the Section 14 criterion for eligibility has been met. Phase II and Phase III analyses are not required to establish eligibility under Section 14.

Ms. Pederson said she is working on a cultural resources recovery project in West Virginia (Huntington) Hopewell site which she said is a much larger site than the --- site included in this project for \$285,000. She and other representatives of NPS feel 100% data recovery effort at the project site can be accomplished for less than the estimate provided in the April 2004 letter. Called Ms. Pederson to get more info about this project. To date she has not called back.

- 5. Sue Jennings said their team has a problem with the bendway weirs included in the proposed project design. NPS officials asked about the possibility of laying the bank back. The PDT explained why a 1V:1H to 1V:2H slope would not be a viable option and the slope would probably be a 1V:5H slope (as explained in the April 2004 letter). The PDT and Mr. Euton noted the following concerns with this alternative:
  - Significant impact the cultural resources to be protected under Section 14.
  - Increased project cost to excavate, catalogue, and record the recovered artifacts
  - Increased project costs because of the additional riprap, disposal of the
    excavated material (and location of an adequate disposal area), additional real
    estate requirements of the privately owned golf course at the downstream end
    of the project
  - Would require more riprap along the toe of the entire project length to ensure project stability.

Despite these concerns raised, the NPS reiterated their belief that a 1V:5H alternative was the better alternative. While Mr. Euton and members of the PDT continued to emphasize the additional engineering (more riprap needed along the toe), economic (significantly higher costs), and cultural resource (loss of additional cultural resources) obstacles the changed design would present, the NPS officials stated the revisions would be more acceptable because of the Wild and Scenic River designation.

6. The NPS suggested using the streambank stabilization project at Milford, Ohio (upstream of the project site along the Little Miami River) as a model for the ATP site. The Milford project consisted of laying the bank back, placing riprap, and some native plantings along the "upper" slope of riverbank. Mr. Ballard of ODNR said the Milford project was completed for ~\$185,000. Mr. Euton and the PDT noted this was an improper comparison because the sites are very different with different issues and different constraints. The ATP is much larger (at least 60% larger). The Milford site is not located downstream of a significant bend in the river nor does it have cultural

resources constraints. The NPS did not address those differences; they stated that they had spoken to the contractor who constructed the Milford project and he said using the Milford design, he could complete the ATP project for about \$300,000. Ms. Suggs questioned the cost estimate as extremely low. She also questioned if the contractor's knowledge of the ATP site conditions, quantity of rock required, real estate concerns, etc. NPS officials proposed that the Milford contractor prepare a cost estimate, however, Ms. Suggs asked who would pay for these services. The NPS asked if the COE could pay him for estimate. Because the COE has no contracting mechanism in place to pay him, NPS dismissed this suggestion.

- 7. Ms. Suggs questioned who would incur the additional project costs of the proposed plan. Under Section 14, the COE must select the least costly alternative. Ms. Suggs also noted that removal of the cultural resources be a non-cost shared expense to be paid by the sponsor. Ms. Jennings said the State of Ohio, the Federal Emergency Management Agency, the Natural Resource Conservation Service, or Little Miami Incorporated could be potential funding sources. Ms. Suggs and Mr. Shipley informed NPS that none of these agencies are likely to provide financial support for a streambank stabilization project. Mr. Labovitz suggested upon completion of the revised plan and cost estimate at a 1:5 slope a joint meeting be held with ATP, the COE, NPS, and the Congressional staff to support funding for the revised plan. Ms. Suggs said it was unlikely that the COE would participate in the meeting.
- 8. NPS officials stated their problem with the design was the bendway weirs and its impact to the free flowing characteristics of the river. They cited the Section 16.b. of the Wild and Scenic Rivers Act, which states "Free-flowing, as applied to any river or section of a river, means existing or flowing in natural condition without impoundment, diversion, straightening, rip-rapping, or other modification of the waterway". Ms. Suggs asked why is riprap allowed (as in the Milford project), as riprap is included the definition as well. No answer was provided for this other than repeating the definition. However, they repeated their assertion is that their problem with the design is the weirs affecting the free flow conditions of the river.
- 9. Mr. Gable asked about the COE future involvement with the project. Some of the proposed changes may limit the COE's future participation with the project. If any of the changes increase the cost significantly the COE may not be able to participate. NOTE: The COE could participate assist in funding to the Corps' selected plan. Additional costs beyond this amount would have to be provided by the sponsor or other funding sources.
- Ms. Suggs also asked Mr. Gable why he requested including bendway weirs in the project design. Mr. Gable initially stated he did not suggest the inclusion of the weirs, but later stated if he did suggest inclusion of the weirs, he did not mean in the final plan. Ms. Suggs suggested the NPS discuss the design with David Derrick, the streambank stabilization expert who helped with the project's design. When asked if a conference call with Mr. Derrick would help address any concerns, NPS initially said yes, however, at the end of the meeting Ms. Jennings said the call probably would not help.
- 11. The Way Ahead generated from the meeting is as follows:
  - Ms. Pederson will work up estimates for removal of the artifacts at a 1:5 slope. (4 6 weeks)

- NPS will get assistance in developing cost estimates for construction on a
   1:5 slope (4 6 weeks)
- After these items are accomplished, the NPS, ODNR, COE and ATP would discuss their findings.

# SUBSEQUENT CONFERENCE CALL ON 15 JUNE.

- 1. On June 15, 2004, the undersigned initiated a conference call with Sue Jennings, Kim Johnson, and David Derrick to discuss the project. As the technical expert who assisted in the project's design, Mr. Derrick was asked to address the NPS's concerns about the bendway weirs' impact to the "free flowing" characteristics of the river. While Mr. Derrick provided comments in the April 2004 letter, conference call was conducted to address any NPS's concerns about the bendway weirs. In addition to the aforementioned individuals, Ms. Sandra Washington, Ms. Jenning's supervisor, also participated in the conference call.
- 2. Ms. Suggs began by stating the purpose and asking Mr. Derrick to discuss the nature and function of the weirs, particularly their potential to affect free flowing conditions. Mr. Derrick provided comments based on his experience with weir designs. He began discussing the origin of the weir design technology and discussed the benefits in using them. His comments included discussions of the weirs purpose to realign the thalweg were the highest velocity occurs, not to change the sediment deposition. Use of the weirs will require much less rock along the toe of the bank. He pointed out that most of the weirs are extremely short with only the last three longer.

Ms. Washington asked if the Corps had declared the Little Miami River as navigable for the purpose of constructing weirs on the river. The Corps informed her the Little Miami River is not a navigable river.

- 3. Mr. Derrick asked for a definition of *free flowing*. Mr. Derrick noted that the proposed plan would not change the water surface profile. Ms. Washington and Ms. Jennings referred to the definition listed in Section 16 of the Wild and Scenic Rivers Act (see attached).
- 4. Mr. Derrick asked about the Little Miami River's designation as a National Wild and Scenic River. As described by Ms. Jennings and Ms. Washington, there are two designations under the Wild and Scenic Rivers Act Scenic and Recreational. The portion of the river at the Anderson Township Park site has a recreational designation.
- 5. The undersigned questioned the project costs. Ms. Washington asked if the Corps is just tasked with finding the least costly alternative. Ms. Suggs explained that under Section 14 are required to select the least costly alternative, however in this case the least costly alternative has the most bioengineering features than the proposed 1:5 redesign. The undersigned also noted that in the letter mailed to them, the team discussed the different alternatives investigated. The alternative is less costly because it uses less rock and it is more aesthetically pleasing that riprap alone.

- 6. Ms. Johnson asked if root wads could be used instead of the bendway weirs. Mr. Derrick said no and based on experience, only stone or articulated concrete mattress can work. The stone is essential. Mr. Derrick said he feels this is the minimum amount of work that will successfully protect the bank.
- 7. Ms. Jennings said they do not dispute the functionality of the design, they cite the definition of free flowing. Ms. Jennings talked about the success of the Milford project upstream of the site.

8. The meeting ended with no resolution, the NPS will continue to work to develop their estimates.

Follow up discussions about the meeting:

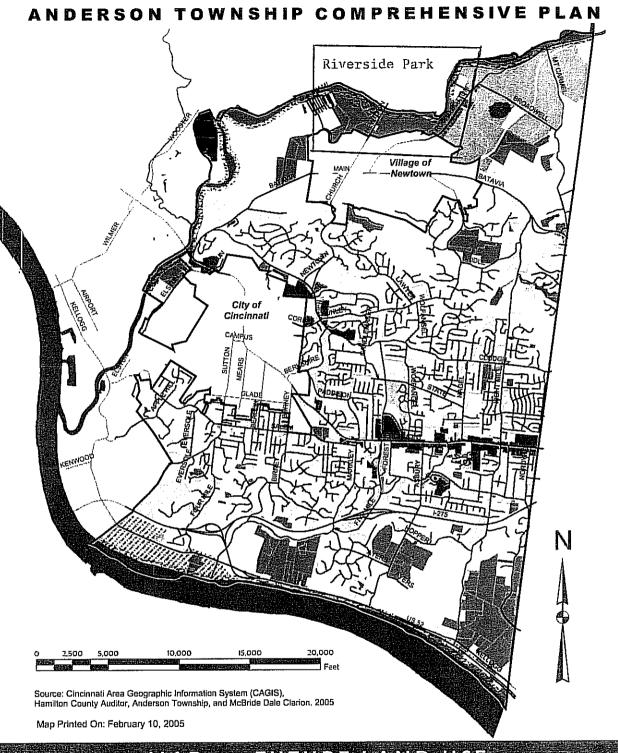
The following observations have been generated from the aforementioned meetings:

• Based on discussions at the project site on 3 June, there is uncertainty whether the review team was familiar with the project. Two members of the review, Mr. Bob Gable and Dean Alexander seemed unaware that the project included fill.

- ODNR has provided inconsistent guidance throughout the entire project process. This has culminated with two items, a letter from ODNR to Anderson Township stating they have done nothing over the period they have owned it. This is not true and the Township has documentation from consultations with the agency in which they have tried ODNR's suggestions but the problems have continued. Additionally, at the meeting, Bob Gable said he did not suggest the use of weirs for this project. His response to this was while he may have said to look at weirs he did not say include them in the project.
- NPS is asserting they will not support the project because it contains weirs. When asked if they will ever support a project with weirs they continually site the definition. This definition also includes riprap. The NPS has yet to adequately explain how riprap can be used but weirs cannot.
- NPS came to the 3 June meeting proposing a new plan that we stated we had looked at and our concerns about it. A plan on a 1:5 slope is impractical from a financial standpoint and would be an adverse impact to the cultural resources we are trying to protect. The NPS believes the project can be constructed for \$300,000. The estimate was made without walking the site, without knowing the site conditions, real estate costs, haul costs, rock costs. The rock alone for the proposed plan is \$325k. They had not considered how much rock would be required for this plan. The solution would not simply be to removed the weirs, as Mr. Hite stated at the site. The toe of slope would have to be increased to make sure it will hold. It was obvious that they have not considered this not discussed how much additional rock this would add to the stream. What would this do to the recreational and aesthetic qualities.
- Then the NPS talks about possible funding from FEMA, NRCS, ODNR, and even the LMI. None of these are viable funding sources. What NPS has proposed, without any discussion with the Ohio Preservation Office, is removal of the cultural resources. If we

had been told that this is where NPS is moving, we could have had cultural resource experts to discuss the matter.

- If weirs would not be approved we should have been told initially.
- In conclusion, the undersigned plans to request additional leadership in this matter. The undersigned believes that resolution can only be obtained if higher personnel are involved. The project is not being reviewed on its technical merit, the criteria for evaluation that is being used is a definition that does not appear consistent with other projects they have approved. To simply state construct the project like Milford does not account for the different parameters at the two different sites. One does not handle all situations the same just because it is on the same river. At best this is a short cited approach to solution.

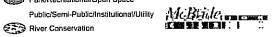


# MAP 10: FUTURE LAND USE



Entertainment Commercial/Office

//// Transitional Mixed Use







SINGLE FAMILY RESIDENCE



SINGLE FAMILY CLUSTER RESIDENCE

Low-density detached housing and related compatible uses where the lots are clustered together in order to preserve environmental resources such as full sides or Boodplains.



GENERAL OFFICE

Office uses and related commutable uses at intensities consistent with surrounding development



GENERAL BETAIL

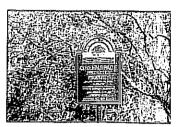
Future Land Use

CATEGORIES

Community and regional-oriented business uses that tend to cate along highways with relatively high traffic volumes.

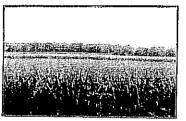


Larger scale industrial uses or excavation uses that may notfule intensive manufacturing activities and contain on



TOWNSHIP GREENSPACE

Township-owned land, water, or weslands not for the township-owner fand, water, or wethinds not nor the purpose of recteation, but or the purpose of protecting and preserving the institual, scenic, open, or wooded condition of hand, water, or wetlands against undiffication encroadment resulting from recupsion, development, or



BURAL RESIDENCE/AGRICULTURE

density single-family detached housing and agriculture ig with related compatible uses generally associated and environment. In Auderson Township, these uses with the designated floodplain where high-density uses of any type are inappropriate.



TRANSITIONAL MIXED USE

Moderate-density detached housing, low-intensity office uses (such as conversion of single-family residence) and related compatible uses (excluding retail and industrial) that provide a transition between residential uses and other types of



ENTERTAINMENT COMMERCIAL

Includes commercial attractions and event destination uses (e.g. fliver Downs, Riverbend and Coney Island) and provides (are the adequate facilities and multimodal access (i.e., River access). Entertainment Commercial will also encourage hospitality and appropriate service facilities such as hotels



PUBLIC/SEMI-PUBLIC/INSTITUTIONAL/UTILIT

Includes a broad range of public and institutional uses that includes a treat range or pions and instrutional uses that include community centers, schools, thurstless, country thots, sports clubs, hospitals and colorational, philosophic religious or charirable Institutions, and public properties an buildings with similar uses. Utilities include facilities for gas, electric, water, sewer, cable television or other similar



TRANSITIONAL RESIDENCE

Moderate-dentity detached or attached housing and related compatible uses, excluding office, commercial and industrial uses, which provide a transition between singlefamily residential uses and other types of development, where such uses will effectively terminate the spread of the higher intensity uses and conserve the adjacent residential neighborhoods



MULTI-FAMILY RESIDENCE

High-density arrached housing and related compatible uses



SCENIC RIVER COMMERCIAL

NEIGHBORHOOD RETAIL

Low-intensity neighborhood-oriented retail and service

nees that provide a transition between residential uses and other types of development or that active a compatibility and service appropriate to the adjacent residential neighborhood

Areas designated to have mixed uses oriented toward tourism, pedestrian and bike travel on trails with local neighborhood access. This land use designation shall encourage an architectural style and scale in keeping with the Olos Piece travel. the Ohin River vernacular character and proportioned to pedestrian/like trail users.



This use is essentially the same as Entertainment



ENTERTAINMENT COMMERCIAL/OFFICE

Commercial with the addition of low-density, "campus-style" office use that is appropriate in scale and responsive to the character of the area.



LIGHT INDUSTRY

Smaller scale industrial uses such as warehouses, storage, lumined manufacturing, research and development, transit terrinals and wholesaling activates in enclosed facilities



This use is a proposed conservation area that extends 25a feet from the normal high water much for both the Little Mianti and Ohio Rivers. The primary use of this area should be passive recreational activities including hillong. Islaing, etc. with an emphasis on prosecting the natural features and regestation of the area. Buildings should be excluded from the area for the maximum extent feasible.



PARRS/RECREATION/OPEN SPACE

Public and private paths, playgrounds, private open space, public greenspace (excluding Township-invited greenspace), gulf courses and other recreational uses.

www.anderso..township.org